IEEE 802.16 Working Group on Broadband Wireless Access

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To: Seizo Onoe
Chairman, IMT-Advanced Subcommittee
Advanced Wireless Communications Study Committee
Association of Radio Industries and Businesses (ARIB)

Subject: Liaison statement of 24 September concerning IMT-Advanced submission

Dear Mr. Onoe,

Thank you for letting us know the status of Japan's preparations for IMT-Advanced submission through your liaison statement (IEEE L802.16-09/0110) as well as the report from your liaison official. We would also like to thank you for sharing with us the draft Table of Contents of Japan's IEEE 802.16m Proposal for IMT-Advanced and the final timeline of the approval process in Japan for IMT-Advanced submission.

As per our communication on IEEE's preparations for IMT-Advanced submission, as well as in accordance with the IEEE 802.16 ITU-R Liaison Group Workplan (L802.16-08/058), we have completed the necessary documentation for IEEE's IMT-Advanced submission during our Session #63.5 (21-24 September in Hawaii, USA).

Following review by the IEEE 802.18 Radio Regulatory Technical Advisory Group (TAG), our submission package is now authorized for IEEE's submission, pending editorial finalization, to the ITU-R Working Party 5D (WP 5D) meeting in October. We will encourage IEEE to inform you of the final status by 29 September.

During Session #63.5, we have made small changes to the submission package that we previously shared with your organization on 4 September. Per your request, we include a summary of these changes in Annex 1. We believe that none of these changes impact IMT-Advanced technical requirements. Please note that changes to technical performance figures occurred due to our receipt of additional performance simulation results from IEEE 802.16 Working Group (WG) members. This led to changes with respect to the compiled average values included in our draft submission package produced at Session #63.

We would like to share with you our final submission package (IEEE L802.16-09/010Xr2) for your

organization's approval purposes. It is available here: <http://ieee802.org/16/liaison/#09_010X>.

We are delighted to know that ARIB plans to submit its contribution to the ITU-R WP 5D meeting in October in order to express ARIB's endorsement of IEEE's IMT-Advanced proposal.

We would also like to notify your organization that IEEE may issue a press release in October announcing the IMT-Advanced submission. For your information, the draft press release under review is available here: <http://ieee802.org/16/docs/#09_0054>.

We will continue to appreciate contributions from the ARIB IMT-Advanced Subcommittee participants toward IEEE 802.16m standard development as well as toward our continuing IMT-Advanced activities.

Sincerely,

Roger B. Marks
Chair, IEEE 802.16 Working Group on Broadband Wireless Access

cc: Kohei Satoh, Managing Director, ARIB
Shinichi Nomoto, WG-I Chair, RIT Study Group of ARIB IMT-Advanced Subcommittee
Takashi Shono, IEEE 802.16 WG Liaison to ARIB IMT-Advanced Subcommittee
Tatsuyoshi Nakamura, WG-I Secretary, RIT Study Group of ARIB IMT-Advanced Subcommittee
Paul Nikolich, Chair, IEEE 802 Executive Committee
Reza Arefi, ITU-R Liaison Group Chair, IEEE 802.16 Working Group
Michael Lynch, IEEE-SA Technical Liaison to ITU-R

Annex: Summary of Changes from L802.16-09/010Xr1 to L802.16-09/010Xr2

On 4 September, following Session #63, the IEEE 802.16 WG submitted a first draft (IEEE L802.16-09/010Xr1) of its IMT-Advanced submission package to ARIB. Subsequently, prior to and during Session #63.5, the IEEE 802.16 WG received several contributions aiming at improving the overall quality of the IMT-Advanced submission. As a result of these input contributions, the IEEE 802.16 WG updated its first draft and produced a final version, IEEE L802.16-09/010Xr2, which was subsequently approved for IEEE submission.

The following list is an overview of the changes from L802.16-09/010Xr1 to L802.16-09/010Xr2.

1) Editorial clean-up: A contribution from the IEEE 802.16 ITU-R Liaison Group Chair, who also serves as editor of the document, addressed many editorial issues including the following:

a. Fixing typos: This was done throughout the documents in a very detailed manner.

b. Checking for consistency of information: Effort was made to provide consistency among various sections on terminology, referencing the IEEE 802.16 WG or external documents, etc.

c. Improving readability and formatting: Due to information from various sources, it was important to harmonize formatting throughout the document. In addition, the entire submission package was reviewed several times to ensure readability and clarity.

d. Adding a list of abbreviations to Part 2: A list of abbreviations was added to the end of Part 2 for the convenience to readers.

2) Fixing list of references in Part 2: The main changes to the reference list were as follows:

a. Replacement of the reference to the IEEE 802.16m draft standard with a reference to a new document developed specifically to address the RIT evaluation. Since the draft standard contains material not directly relevant to the RIT evaluation, the new document, *System Evaluation Details for IEEE 802.16 IMT-Advanced Proposal*, is customized. The reference to this document is added so that evaluation groups could have access to sufficient and necessary information required for evaluations.

b. Fixing some broken URLs.

c. Adding references to three new documents containing detail calibration and simulation results submitted by the IEEE 802.16 WG members.

3) Updating some of the referenced documents due to changes made by the IEEE 802.16 WG: During the comment resolution process, used to update and maintain high quality documents, the IEEE 802.16 WG has made some changes to the 802.16m System Description Document (SDD), the Stage 2 specification. Since this document is referenced extensively in the submission package and is also electronically attached to Part 3, special care was given to correctly capture all references to various section and subsection numbers of the SDD in the submission package. A few figures were also updated as a result of the IEEE 802.16 WG decision to update those in the SDD.

4) Updating some of technical performance values as a result of input contributions: During Session #63.5, the IEEE 802.16 WG received contributions reporting simulation results from companies not reporting at Session #63. While this was very good news for the IEEE 802.16 WG, it resulted in some changes to the average values reported for certain items in the Performance Compliance Template (PCT) due to the larger sample space. As a result, following PCT items were impacted:

a. Spectral efficiency
b. VoIP
c. Mobility requirements

However, in all cases, the proposed RIT still meets the IMT-Advanced requirements. In many cases, the margin was improved due to newly submitted results.

5) Adding Annex 4 to Part 4 containing detailed simulation results: The IEEE 802.16 WG decided that it is important to share with ITU-R WP 5D the details of its simulation results, including individual numbers reported by the various IEEE 802.16 WG members in addition to the final average numbers. As a result, Annex 4, Details of Simulation-related Results in the Compliance Template for Technical Performance, was added to Part 4 to serve this purpose.

6) Updating Link Budget Template (LBT) tables as a result of input contributions: Further calibration and coordination of system-level simulation assumptions and methodologies led to some changes in link budget analysis. These changes are implemented in all LBT tables in Part 3.

The above changes have significantly improved the submission package and have had no impact on meeting the IMT-Advanced technical requirements.