



*Radiocommunication Bureau*  
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**Addendum 4 to  
Circular Letter  
5/LCCE/2**

7 December 2010

**To Administrations of Member States of the ITU, Radiocommunication Sector  
Members and ITU Associates participating in the work  
of Radiocommunication Study Group 5**

**Subject:** Announcement of the IMT-Advanced radio interface technologies resulting from the successful completion of Steps 4 through 7 of the IMT-Advanced process, the availability of Report ITU-R M.2198<sup>1</sup>, and information on Step 8 of the IMT-Advanced process

## **1 Introduction**

The first invitation for the submission of proposals for candidate radio interface technologies (RITs) or sets of RITs (SRITs) for the terrestrial components of IMT-Advanced was issued with Circular Letter 5/LCCE/2 on 7 March 2008. The Circular Letter initiated an ongoing process to evaluate the candidate RITs or SRITs for IMT-Advanced. It also invited the formation of Independent Evaluation Groups and the subsequent submission of evaluation reports on these candidate RITs or SRITs.

On 13 August 2008, [Addendum 1 to Circular Letter 5/LCCE/2](#) announced the availability of further information associated with the IMT-Advanced submission and evaluation process.

On 18 December 2008, [Addendum 2 to Circular Letter 5/LCCE/2](#) announced the availability of three ITU-R Reports that provide details of the IMT-Advanced requirements, evaluation criteria, and submission templates.

On 9 November 2009, [Addendum 3 to Circular Letter 5/LCCE/2](#) announced the receipt of proposals for candidate radio interface technologies for the terrestrial components of the radio interface(s) for IMT-Advanced and the next steps in the IMT-Advanced process.

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<sup>1</sup> Report ITU-R M.2198 “*The outcome of the evaluation, consensus building and decision of the IMT-Advanced Process (steps 4-7) including characteristics of IMT-Advanced radio interfaces*”

This Addendum announces the technologies for IMT-Advanced that have successfully completed Steps 4 through 7 of the IMT-Advanced process and are now designated as IMT-Advanced. It also highlights the planned next steps for the work in Step 8, following the IMT-Advanced process detailed in Document IMT-ADV/2(Rev.1).

## **2 Completion of Steps 4-7 of the IMT-Advanced process documented in Report ITU-R M.2198**

Report ITU-R M.2198 is the record of the work performed after receipt of the proposals for IMT-Advanced candidate radio interface technologies, including the evaluation activity and the consensus building. This document contains the outcome and conclusions of Steps 4-7 of the IMT-Advanced process, as outlined in Document IMT-ADV/2(Rev.1). The Report provides the technical characteristics of the candidate radio interface technologies and states the decisions reached by the ITU-R on each of the candidate proposals. Note that the actual specifications of the agreed IMT-Advanced radio interfaces will be contained in Recommendation ITU-R M.[IMT.RSPEC], to be developed in 2011 under Step 8 of the IMT-Advanced process.

Under the IMT-Advanced process, ITU-R has concluded the detailed evaluation of the candidate RITs and SRITs by evaluation groups (Step 4), finished the review and coordination of outside evaluation activities (Step 5), concluded a review to assess compliance with minimum requirements (Step 6), completed consultation on the evaluation results and consensus building and rendered a decision (Step 7) on those technologies that should move forward into Step 8.

## **3 Announcement of IMT-Advanced technologies, results of consensus building, and the way forward for Step 8**

Steps 4 through 7 of the IMT-Advanced process have been concluded.

Each of the six candidate technology submissions (and their respective SRIT or RITs) has individually satisfied Steps 4 through 7 of the IMT-Advanced process successfully and thus each of these IMT-Advanced candidate technology submissions has the opportunity to proceed to Step 8. The six candidate technology submissions are contained in the following six acknowledgement documents:

- IMT-ADV/4 – Acknowledgement of candidate submission from IEEE under Step 3 of the IMT-Advanced process (IEEE Technology).
- IMT-ADV/5 – Acknowledgement of candidate submission from Japan under Step 3 of the IMT-Advanced process (IEEE Technology).
- IMT-ADV/6 – Acknowledgement of candidate submission from Japan under Step 3 of the IMT-Advanced process (3GPP Technology).
- IMT-ADV/7 – Acknowledgement of candidate submission from TTA under Step 3 of the IMT-Advanced process (IEEE Technology).
- IMT-ADV/8 – Acknowledgement of candidate submission from 3GPP proponent (3GPP Organization Partners of ARIB, ATIS, CCSA, ETSI, TTA AND TTC) under Step 3 of the IMT-Advanced process (3GPP Technology).
- IMT-ADV/9 – Acknowledgement of candidate submission from China (People's Republic of) under Step 3 of the IMT-Advanced process (3GPP Technology).

Additionally, consensus building has been performed during Step 7 with the objective of achieving global harmonization and having the potential for wide industry support for the radio interfaces that are developed for IMT-Advanced.

As a result of the consensus building during Step 7 in ITU-R among the six technology proposals, the following two groupings were agreed by ITU-R:

- the RITs and SRITs proposed in IMT-ADV/6, IMT-ADV/8 and IMT-ADV/9 were grouped into the technology identified in ITU as “*LTE-Advanced*”<sup>2</sup>, developed by the Third Generation Partnership Project (3GPP); and
- the RITs proposed in IMT-ADV/4, IMT-ADV/5 and IMT-ADV/7 were grouped into the technology identified in ITU as “*WirelessMAN-Advanced*”<sup>3</sup>, developed by IEEE.

Thus, the final outcome of Steps 4-7 of the IMT-Advanced process was the approval of the technologies “*LTE-Advanced*” and “*WirelessMAN-Advanced*” as IMT-Advanced technologies.

In addition, both “*LTE-Advanced*” and “*WirelessMAN-Advanced*” were accepted for inclusion in the standardization phase of the IMT-Advanced process and are proceeding to Step 8 and to subsequent development of IMT-Advanced.

It was noted that:

- the basis for specifying the “*LTE-Advanced*” technology in Step 8 is Document IMT-ADV/8, which is technically identical to IMT-ADV/6 and IMT-ADV/9 (except that IMT-ADV/9 contains only the TDD RIT component); and
- the basis for specifying the “*WirelessMAN-Advanced*” technology in Step 8 is Document IMT-ADV/4, which is technically identical to IMT-ADV/5 and IMT-ADV/7.

Note that the documentation discussed herein is available on the ITU-R IMT-Advanced web page (<http://www.itu.int/itu-r/go/rsg5-imt-advanced>).

Further details are included in Report ITU-R M.2198.

#### **4 IMT-Advanced process and timing for Step 8**

Under the IMT-Advanced process, the ITU-R will now undertake the standardization phase of IMT-Advanced to be completed in Step 8 of the process. This entails the development of radio interface Recommendation(s).

Work is underway towards finalizing Recommendation ITU-R M.[IMT.RSPEC] (“*Detailed specifications of the terrestrial radio interfaces of IMT-Advanced*”) by year-end 2011, for approval at the Radiocommunication Assembly in January 2012. Guidance for the use of a Global Core Specification (GCS)<sup>4</sup>, references, and related notifications and certifications that are to be provided for ITU-R M.[IMT.RSPEC] is available in Document IMT-ADV/24 (“*Process and the use of Global Core Specification (GCS), references and related certifications in conjunction with Recommendation ITU-R M.[IMT.RSPEC]*”).

A view of the overall IMT-Advanced steps may be found at <http://www.itu.int/oth/R0A06000012/en>.

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<sup>2</sup> Developed by 3GPP as *LTE Release 10 and Beyond (LTE-Advanced)*.

<sup>3</sup> Developed by IEEE as the *WirelessMAN-Advanced* specification incorporated in IEEE Std 802.16 beginning with approval of IEEE Std 802.16m.

<sup>4</sup> A “GCS” (Global Core Specification) is the set of specifications that defines a single RIT, an SRIT, or a RIT within an SRIT.

## **5 Updates to the ITU-R IMT-Advanced web page**

Any future changes will be announced in Addenda to this Circular Letter or will be updated dynamically on the IMT-Advanced web page (<http://www.itu.int/ITU-R/go/rsg5-imt-advanced/>), as appropriate. Consequently, participants in the IMT-Advanced development activities are kindly requested to periodically check that web page.

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### **Distribution:**

- Administrations of Member States of the ITU and Radiocommunication Sector Members participating in the work of Radiocommunication Study Group 5
- ITU-R Associates participating in the work of Radiocommunication Study Group 5
- Chairman and Vice-Chairmen of Radiocommunication Study Group 5
- Secretary-General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau