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| **Radiocommunication Advisory GroupGeneva, 24-27 June 2014** |  |
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|  | **Document RAG14-1/23-E** |
| **20 June 2014** |
| **English only** |
| Ukraine |
| Consideration and possible actions on testing for conformance with the ITU-R Recommendations |

# 1 Introduction

According to Resolution ITU-R 62 “Studies related to testing for conformance with ITU-R Recommendations and interoperability of radiocommunication equipment and systems”:

– the ITU-R collaborate with, and provide information when requested by, ITU-T and ITU-D on conformance and interoperability testing within its existing mandate consistent with Resolution 177 (Guadalajara, 2010);

– the Director of the Radiocommunication Bureau was instructed: 1) to prepare a report on the progress made to better understand the unique problems of developing countries with respect to radiocommunication equipment conformance and interoperability and the testing thereof, based on, inter alia, contributions from Member States and Sector Members; 2) to submit this report to the ITU Council at its 2013 session for consideration and possible actions;

– the Radiocommunication Advisory Group was invited to provide advice to the Director for activities in this area based on inputs received from Member States and Sector Members,

– Members States and Sector Members were invited to contribute to the implementation of this Resolution.

The 19th Radiocommunication Advisory Group meeting noted that not all ITU‑R Recommendations are standards which are normally used for conformance assessment or interoperability testing. However, there are some Recommendations of ITU‑R for which such assessment or testing could be applicable. It was therefore advised that study groups review such ITU‑R Recommendations taking into account the outcome of the Council discussion on the matter and report to the RAG in 2013. Moreover, RAG advised the Director to follow the progress of activities in Council, ITU‑D and ITU‑T.

At its twentieth meeting from 22 to 24 May 2013, RAG received no inputs from the ITU-R study groups on any ITU-R Recommendations for which a conformance assessment or interoperability testing could be applicable. According to the Conformance and Interoperability programme Status Report and Action Plan, approved by the Council 2013, the ITU-R will continue to collaborate with, and provide information when requested by, ITU-T and ITU-D on conformance and interoperability testing, as mentioned in the resolves part of Resolution ITU-R 62.

In February 2014 the ITU published the Basic guidelines on Establishing conformity and

interoperability regimes. In particular, these Basic guidelines contain the List of ICT equipment requiring conformity assessment, including different types of radio apparatus, interference-causing equipment and radio-sensitive equipment, to which the standards and conformity assessment can apply.

According to the Basic guidelines two categories of equipment may be defined:

**Category I:** Equipment must meet technical standards and requires a Technical Acceptance Certificate (Certification) in certain countries.

A non-exhaustive list of such equipment would include broadcasting transmitters, portable radio transmitters, digital scanner receivers, remote car alarms and starters, garage door openers, wireless computer links, cellular phones, cordless phones, fax machines, GSM telephones, mobile radios, modems, wireless remote devices, PABXs (including small business systems and key systems), pagers, radio receivers, radio transmitters, telephone instruments, telex equipment, other equipment emitting a radio signal, any customer premises equipment to be attached to any part of a licensed telecommunication network.

**Category II:** Equipment must meet technical standards but does not have to be certified in certain countries. This applies to equipment such as: electronic transformers or ballasts, alarm keypads, intelligent battery chargers, satellite TV receivers, VCRs, and computers.

# 2 Consideration of ITU-R Recommendations which are applicable for conformance assessment testing

In order to protect the Ukrainian market from low-quality and counterfeit equipment for broadband radio local area networks, in particular broadband RLAN equipment in 2.4 GHz and 5 GHz bands of 802.11 a/b/g and HIPERLAN 2 standards, conformance assessment in Ukraine is performed according to national standard DSTU 7115:2009 based on European standard ETSI EN 301 893. The characteristics, including technical parameters associated with these standards, are specified by the ITU-R Recommendation M.1450-5 (02/2014) “Characteristics of broadband radio local area networks”. However, the ITU-R Recommendation M.1450-5 does not contain a harmonized approach for testing and conformance assessment of equipment parameters, especially typical emission parameters for such single-type broadband RLAN systems as IEEE 802.11a, HIPERLAN2 etc.

The conformance assessment and interoperability procedure provides for testing the emission parameters of broadband radio access equipment defined by transmit spectral masks and contained in the ITU-R Recommendation M.1450-5. For 802.11a, 11g, 11j, HIPERLAN2 and HiSWANa systems the Recommendation contains also a note that the measurements shall be made using a specified resolution bandwidth and video bandwidth but this document does not have common instructions on testing methods. As well, the similar recommendations (standards) are not developed by the ITU-T Sector. Methods and conditions of testing the emission parameters may be found in the standards for this equipment, however, they differ in each basic standard.

An example of non-conformance between parameters of real equipment and parameters specified by the ITU-R Recommendation M.1450-5 is presented in the Annex.

The importance of this issue is directly linked to necessity of ensuring the protection of other services in adjacent bands from out-of-band emissions, which may be caused by broadband wireless access systems. In particular, such protection is defined by the Resolution 229 (rev. WRC-12) in respect of broadband RLAN equipment in 5 GHz band, containing the significant limitations for operational parameters of wireless access equipment in order to prevent the interference and protect other services in adjacent bands.

# 3 Proposal

Taking into account the provisions of Resolution ITU-R 62 and conclusion of 19th RAG meeting that the conformance assessment or testing could be applicable for some Recommendations of ITU‑R, as well as noting that:

– broadband RLAN are widely used for different broadband applications;

– observed cases of non-conformance between parameters of real equipment and parameters specified by the ITU-R Recommendation M.1450-5;

– importance of ensuring the protection of other services in adjacent bands from out-of-band emissions, which may be caused by broadband wireless access systems.

The Administration of Ukraine proposes to consider the possible course of actions in respect of the ITU-R Recommendations, which are applicable for conformance assessment testing and may require the development of technical specification. In particular, the possible development of technical specification for testing the parameters of broadband RLAN equipment, specified in the ITU-R Recommendation M.1450-5, may be performed by the ITU-R Study Group responsible for revision of this Recommendation or by the ITU-T Sector, playing the leading role in realization of the ITU Conformance and Interoperability Programme.

Annex

An example of non-conformance between parameters of real equipment and parameters specified by the ITU-R Recommendation M.1450-5

Transmit spectrum mask for 802.11b as recommended by ITU-R Rec. M.1450-5:

Transmit spectrum mask as obtained by testing a personal computer with integrated card for broadband access on example of IEEE 802.11b (Test Protocol №1767 of the Testing Laboratory of the Ukrainian State Centre of Radio Frequencies):



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