RECOMMENDATION ITU-R M.1545*

Measurement uncertainty as it applies to test limits for the terrestrial component of International Mobile Telecommunications-2000

(Question ITU-R 229/8)

(2001)

The ITU Radiocommunication Assembly,

considering

a) that Recommendation ITU-R M.1457 addresses the detailed specifications of the radio interface of International Mobile Telecommunications-2000 (IMT-2000);

b) that it is reasonable to allow in practice some measurement uncertainty in the measurement method, measurement equipment and measurement test bench when the device is to be tested from a regulatory viewpoint;

c) that a device that is manufactured in one country and passes a conformance test based on regulation of that country may not be well accepted by the regulator of another country, not due to actual inadequacy of the equipment but because of difference in the concepts employed for handling measurement uncertainty;

d) that it is essentially important to achieve a common global understanding of how measurement uncertainty is applied when test limits are defined, in conjunction with how that is incorporated into pertinent specifications;

e) that from a technical perspective, in a case that the measurement uncertainty can be reasonably defined, the following three methods lead to the same result:

– "Never fail a good device under test (DUT)" principle applied to a test limit equals to the core specification value, where core specification value and measurement uncertainty are separately defined (see Annex 1, Fig. 1);

– "Shared risk" principle applied to a test limit calculated by relaxing the core specification value by measurement uncertainty, where core specification value and measurement uncertainty are separately defined (see Annex 1, Fig. 2);

– "Shared risk" principle applied to a test limit which equals the core specification value that includes measurement uncertainty (see Annex 1, Fig. 3),

recommends

1 that maximum allowable measurement uncertainty as it applies to test limits should be defined as a unique and consistent value associated with one or a combination of measurement methods and measurement equipment to be used, when the device for terrestrial component of IMT-2000 is to be tested for conformance;

2 that in order to be consistent with industry practice, the shared risk principle should be used for all tests and that it may be decided to relax the core specification value by a certain relaxation

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* This Recommendation should be brought to the attention of Radiocommunication Study Group 1.