

Speech and multimedia Transmission Quality (STQ); Estimating Speech Quality per Call

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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Speech and multimedia Transmission Quality (STQ).

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1 Scope

The present document proposes a way to model measurement results on a per sample basis that allow to estimate the perceived end-to-end speech quality per call for narrowband circuit switched voice services in mobile networks.

The scenario is focussing on test signals between 60 seconds and 120 seconds in duration with alternating speech/silence periods as described in clause 5. The presented model is based on three studies but may not generalize to other call scenarios than those used in the underlying studies.

Throughout the present document where ITU-T Recommendation P.862.1 [i.2] (or ITU-T Recommendation P.862 [i.1]) is quoted the same applies to all measurements of listening quality. This can be listening quality scores gained by auditory tests (MOS-LQS) or objective measurements predicting MOS-LQO according to ITU-T Recommendation P.800.1 [i.3] covering the relevant network distortions and speech processing components in their scope.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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2.1 Normative references

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ITU-T Recommendation P.862: "Perceptual evaluation of speech quality (PESQ): An objective method for end-to-end speech quality assessment of narrow-band telephone networks and speech codecs".
- [i.2] ITU-T Recommendation P.862.1: "Mapping function for transforming P.862 raw result scores to MOS-LQO".
- [i.3] ITU-T Recommendation P.800.1: "Mean Opinion Score (MOS) terminology".
- [i.4] ETSI TS 102 250 (all parts): "Speech Processing, Transmission and Quality Aspects (STQ); QoS aspects for popular services in GSM and 3G networks".
- [i.5] ITU-T Recommendation P.862.3: "Application guide for objective quality measurement based on Recommendations P.862, P.862.1 and P.862.2".
- [i.6] ITU-T Recommendation P.800: "Methods for subjective determination of transmission quality".
- [i.7] CENELEC EN 60645-2:1997: "Audiometers - Part 2: Equipment for speech audiometry".
- [i.8] "Ergebnisbericht (Study) Berkomp, PESQ-mobil" (in German), J. Berger, T-Systems.