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Speech and multimedia Transmission Quality (STQ);
Quality of Service aspects of voice communication
in an LTE environment

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Contents

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Foreword

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

Modal verbs terminology

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Introduction

LTE networks are a reality in many markets. CS voice interworking is one of the most crucial points in many networks in Europe. Voice services used on LTE enabled handsets in an LTE environment bring along new QoS aspects which are not yet covered in [i.1], e.g.:

- CSFB, a procedure where the UE operating in LTE mode issues a special service request and the network signals the device to move (fall back) to 2G/3G to accept incoming calls or to place outgoing calls;
- VoLTE, Voice over IP in LTE networks using a dedicated packet bearer and SIP signalling. It is based on the IP Multimedia Subsystem (IMS) network with specific profiles for control and media planes. This approach results in the voice service being delivered as data flow within the LTE data bearer.

The two scenarios mentioned above, very frequently encountered in European networks and worldwide, present specific QoS issues that need to be addressed in detail.

Alternative approaches exist to carry voice calls in LTE networks such as SVLTE (Simultaneous Voice and LTE Data) and VoLGA (Voice Over LTE via Generic Access). However, these are not addressed in the present document as they have only limited industrial support at the time of publication of the present document.

1 Scope

The aim of the present document is to identify and describe important aspects, related QoS parameters, their trigger points and calculation methods in the context of voice communication taking place in an LTE environment.

2 References

2.1 Normative 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 referenced document (including any amendments) applies.

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Not applicable.

2.2 Informative references

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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] ETSI TS 102 250-2 (V2.2.1): "Speech and multimedia Transmission Quality (STQ); QoS aspects for popular services in mobile networks; Part 2: Definition of Quality of Service parameters and their computation".

[i.2] ETSI TS 123 272 (V11.6.0): "Digital cellular telecommunications system (Phase 2+);Universal Mobile Telecommunications System (UMTS); LTE; Circuit Switched (CS) fallback in Evolved Packet System (EPS); Stage 2 (3GPP TS 23.272 version 11.6.0 Release 11)".

[i.3] ETSI TS 123 216 (V8.7.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Single Radio Voice Call Continuity (SRVCC); Stage 2 (3GPP TS 23.216 version 8.7.0 Release 8)".

[i.4] ETSI TS 123 237 (V10.7.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Subsystem (IMS) Service Continuity; Stage 2 (3GPP TS 23.237 version 10.7.0 Release 10)".

[i.5] ETSI TS 123 216 (V11.11.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Single Radio Voice Call Continuity (SRVCC); Stage 2 (3GPP TS 23.216 version 11.11.0 Release 11)".

[i.6] ETSI TS 124 228 (V5.14.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.228 version 5.14.0 Release 5)".