



**SLOVENSKI STANDARD**  
**SIST-V ETSI/EG 202 086 V2.0.0:2009**  
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Speech Processing, Transmission and Quality Aspects (STQ) - Objectives and principles for the transmission performance of multiple interconnected networks that aim to provide traditional quality telephony services

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# ETSI EG 202 086 V2.0.0 (2008-07)

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*ETSI Guide*

**Speech Processing, Transmission and Quality Aspects (STQ);  
Objectives and principles for the transmission performance of  
multiple interconnected networks that aim to provide  
"traditional quality" telephony services**

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## Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Speech Processing, Transmission and Quality Aspects (STQ).

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# 1 Scope

The present document specifies a simple set of objectives, principles and responsibilities for the transmission performance of multiple interconnected networks that provide "traditional quality (POTS)" circuit switched telephony services.

The objectives, principles and responsibilities take account of the liberalization of telephony services and the interconnection of several separate networks, each with different topologies, in the provision of telephony connections.

The present document applies to:

- national and international networks;
- Digital Networks and Integrated Digital Networks (i.e. networks where the only analogue component may be the local loop).

The present document applies in the cases where the telephony service is:

- contracted between the network operator and the customer/end user; and
- contracted through a service provider.

It applies where:

- the caller pays for the call;
- the recipient pays for the call (e.g. the 800 service); or
- the cost of the call is shared by the caller and the recipient.

The present document does not apply to any segment of calls where either the calling or called terminal is a mobile "terminating network".

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# 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
  - for informative references.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

For online referenced documents, information sufficient to identify and locate the source shall be provided. Preferably, the primary source of the referenced document should be cited, in order to ensure traceability. Furthermore, the reference should, as far as possible, remain valid for the expected life of the document. The reference shall include the method of access to the referenced document and the full network address, with the same punctuation and use of upper case and lower case letters.

**NOTE:** While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

## 2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ITU-T Recommendation G.113 (1996): "Transmission impairments".
- [2] ITU-T Recommendation G.114 (1996): "One -way transmission time".
- [3] ITU-T Recommendation G.126 (1993): "Listener echo in telephone networks".
- [4] ITU-T Recommendation G.131 (1996): "Control of talker echo".
- [5] ITU-T Recommendation G.168 (1997): "Digital network echo cancellers".
- [6] ITU-T Recommendation G.175 (1997): "Transmission planning for private/public network interconnection of voice traffic".
- [7] ITU-T Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".
- [8] ITU-T Recommendation G.821 (1996): "Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network".
- [9] ITU-T Recommendation G.822 (1988): "Controlled slip rate objectives on an international digital connection".
- [10] ITU-T Recommendation G.826 (1996): "Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate".
- [11] ITU-T Recommendation Q.551 (1996): "Transmission characteristics of digital exchanges".
- [12] ITU-T Recommendation Q.552 (1996): "Transmission characteristics at 2-wire analogue interfaces of digital exchanges".
- [13] ETSI EG 201 050: "Speech Processing, Transmission and Quality Aspects (STQ); Overall Transmission Plan Aspects for Telephony in a Private Network".
- [14] ETSI EN 300 462-1-1: "Transmission and Multiplexing (TM); Generic requirements for synchronization networks; Part 1-1: Definitions and terminology for synchronization networks".
- [15] ETSI EN 300 462-6-1: "Transmission and Multiplexing (TM); Generic requirements for synchronization networks; Part 6-1: Timing characteristics of primary reference clocks".
- [16] ISO/IEC 11573 (1994): "Information technology - Telecommunications and information exchange between systems - Synchronization methods and technical requirements for Private Integrated Services networks".

## 2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Not applicable.



## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**network operator:** organization that runs a network (switches and transmission) on which a service is provided

**service provider:** organization that offers and provides the telephony service to the customer

NOTE: This may be the same organization that is the network operator.

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A/D	Analogue to Digital
ADPCM	Adaptive Differential Pulse Code Modulation
ATM	Asynchronous Transfer Mode
D/A	Digital to Analogue
NTP	Network Termination Point
QDU	Quantizing Distortion Units
RLR	Receive Loudness Rating
SLR	Send Loudness Rating
VAD	Voice Activity Detection

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## 4 Principles

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### 4.1 Responsibility

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With the development of competition so that a substantial proportion of calls pass across more than one network, it is no longer realistic to consider that any operator has overall responsibility for the quality of a call from one user-network interface to the other unless the call remains wholly on-net. Responsibility implies choice and control, but in many cases this choice and control do not exist.

EXAMPLE 1: Call termination, where normally there is only one operator who serves a given number and the operator who is paid to handle the call has no choice over its delivery.

EXAMPLE 2: Call origination for carrier selection or pre-selection, where the subscriber chooses their access operator and their call handling operator separately such that the call handling operator has no control over the choice of access operator.

In both these cases the operator who is paid to handle the call may have to pay the other operator but has no effective control since the other operator is in a monopoly position. Furthermore the calling user/subscriber has no control over the terminating operator selected by their correspondents.

In this situation, adequate end-to-end quality can be achieved only by all operators following standards and where there are choices that might involve incompatibilities by exchanging information and cooperating so that incompatibilities can be avoided.

### 4.2 Technical requirements

The following technical requirements apply to the segment of the call for which the operator is responsible, in accordance with clause 4.1.