



International Telecommunication Union

ITU-T Study Group 12

Current Status and Future Trends of Performance Specifications for Speech Terminals

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Workshop on QoS and user-perceived
transmission quality in evolving networks



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Current Status and Future Trends of Performance Specifications for Speech Terminals

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quality in evolving networks



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Performance Specifications

- Speech telephony is working for more than 140 years (Ph. Reiss 1861)
- The quality results both from the terminals and the network(s) in the voice signal transmission path
- Therefore, the parameters describing Voice Quality must be discussed whenever a new technology is being introduced

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quality in evolving networks

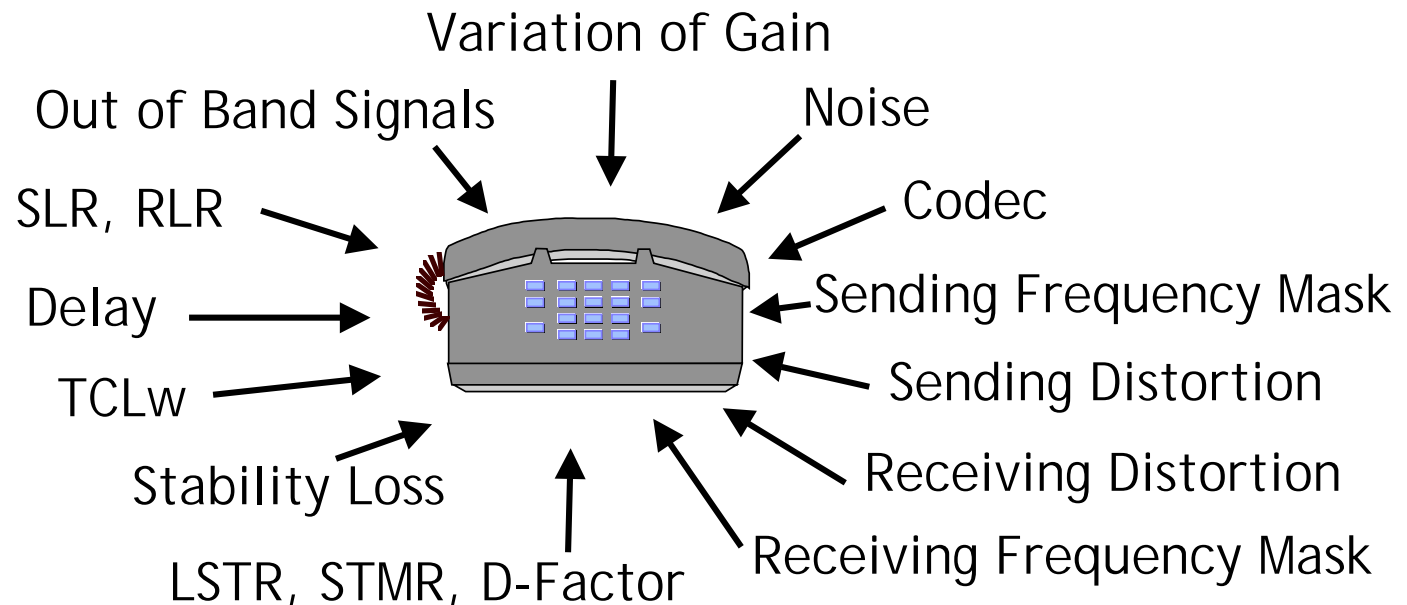


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Performance Specifications for Terminals

Specified Parameters for Terminals



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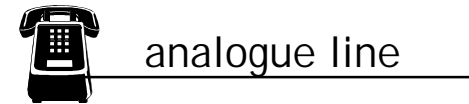


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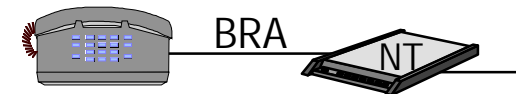
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Different Technologies require different Values

- o Analogue Phones



- o Digital Phones (ISDN)



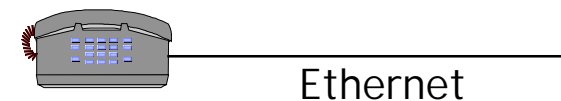
- o Cordless Phones



- o Mobile Phones (e.g. GSM)



- o IP Phones



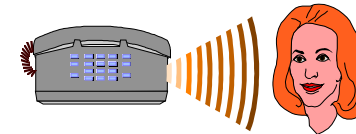


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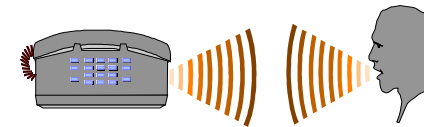
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New Features require different or additional Values

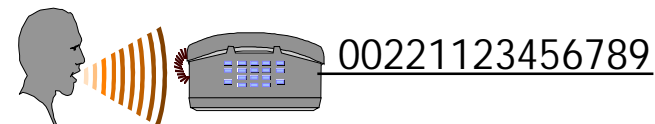
o Loudspeaking



o Hands-free Operation



o Voice Dialling

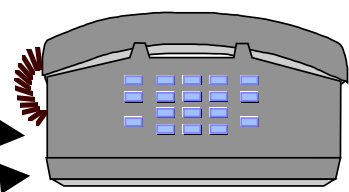


Voice Dialling is a local function inside a terminal, however, the electro-acoustical devices are reused while operating.

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Important Parameters for Analogue Phones

- o Impedance
 - o Frequency Masks
 - o Losses
- 
- o Reason: Transmission over 2-wire copper lines





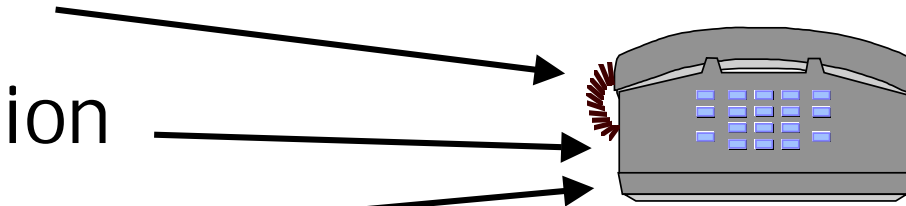
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Important Parameters for Digital Phones

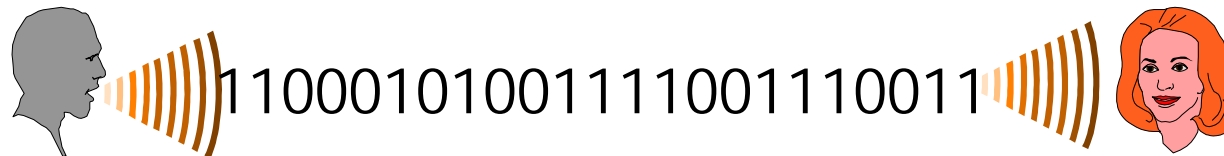
o Codec

o Distortion

o TCLw



Reason: Transmission of coded voice signals





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Important Parameters for Mobile Phones

- Delay
 - Codec
 - Loudness Ratings
- 

Reason: Transmission over radio path

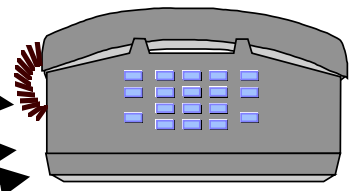




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Important Parameters for IP-Phones

- o Delay
 - o Codec
 - o Error Concealment
 - o TCLw
- 

Reason: Transmission of voice packets



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Conclusions

- Performance Specifications for Terminals recommended in ITU-T documents cover the need for existing networks.
- Currently Study Group 12 is working on Recommendations for Terminals used in new networks (i.e. VoIP- and mobile networks).



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Recommendations

- o P.310 Digital Phone (3.1kHz) Handset
- o P.311 Digital Phone (7 kHz) Handset

- o P.340 Hands-free Operation (Gen. Aspects)

- o P.341 Digital Phone (7 kHz) Hands-free
- o P.342 Digital Phone (3.1 kHz) Hands-free

- o P.313 Mobile and Cordless Phones *

- o "IP-Phone Recommendation" *

* Will be discussed next week