

ETSI TC STQ

ETSI Technical Committee Speech and Multimedia Transmission Quality

Key Activities & Responsibilities

TC STQ and its subgroup **STQ Mobile** are responsible for the **standardisation of test methods and requirements for terminals and networks to deliver speech and media quality**, ensuring high **end-to-end transmission performance** across fixed and mobile communication systems.

Mission and Objectives

STQ defines **test methods, performance requirements, and quality metrics** to guarantee a consistent **Quality of Experience (QoE)** from the user's perspective. Its work supports the design, evaluation, and standardisation of:

- **Speech and multimedia quality** in both traditional and emerging communication systems.
- **Single-media and multimedia transmission performance**, focusing on user perception.

- **Quality of Service (QoS)** and related measurement methodologies for networks and services.
- Integration with **future communication technologies**, such as 5G, IoT, and extended reality.

Technical Focus Areas

1. Terminals and User Equipment

- Devices for **talking, listening, and seeing** now span diverse use cases and rely on increasingly complex audio and visual processing chains.
- Challenges include the impact of **speakers, microphones, signal processing**, and the **acoustic environment** (noise, reverberation) on perceived quality.

2. Network Performance and Impairments

- Communication quality depends on **packet loss**, **delay**, and **jitter**, affecting voice and multimedia transmission.
- STQ addresses how these impairments can be measured, mitigated, and modelled to maintain stable end-to-end user experience.

3. Speech Coding and Transmission

- Speech codecs transform audio into data packets using **bandwidth limitations** and **lossy compression** techniques.
- STQ evaluates how codec design, terminal characteristics, and network behaviour collectively influence the perceived quality, naturalness, listening effort and intelligibility of speech.

STQ and STQ Mobile Domains

- **STQ:** Focuses on laboratory-based test methods, objective and subjective evaluation methods, and overall speech and multimedia transmission quality requirements. STQ regularly liaises with **3GPP**, **ITU-T**, **TIA** and other organisations.
- **STQ Mobile:** Works on field measurement techniques and also liaises with **3GPP**, **ITU-T**, and other organisations to develop interoperable testing and performance standards for mobile environments.

Accessibility and Inclusion

The committee also examines how **design choices in end-to-end communication chains** affect users with varying **hearing, speech, and visual abilities**.

Key questions include:

- How do bandwidth, compression, and processing affect speech perception?
- Are accessibility aspects sufficiently considered in test design?
- What gaps remain in current evaluation methods?

Conclusion

The ETSI STQ committee continues to play a central role in shaping global standards for **speech and multimedia transmission quality**, addressing both **technical challenges** and **human-centric factors in speech and media perception**. Through collaboration, rigorous testing frameworks, and forward-looking research, STQ ensures that evolving communication technologies deliver consistent and inclusive quality experiences for all users.

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TC STQ Portal:
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TC STQ

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About ETSI

ETSI is one of only three bodies officially recognised by the European Union as a European Standards Organisation (ESO). It is an independent, not-for-profit body dedicated to ICT standardisation. With over 900 member organisations from more than 60 countries across five continents, ETSI offers an open and inclusive environment for members representing large and small private companies, research institutions, academia, governments, and public organisations. ETSI supports the timely development, ratification, and testing of globally applicable standards for ICT-enabled systems, applications, and services across all sectors of industry and society.

