Manifestations RAPPEL: ITU-T workshop

ITU-T workshop "From Speech to Audio: bandwidth extension, binaural perception"
Lannion, France 10-12 September 2008

Organized by: ITU-T Study Group12

Website: http://www.itu.int/ITU-T/worksem/speechaudio/cpapers.html

For several decades, spanning the evolution from circuit switched telephony to IP telephony, digital voice communications have relied on narrow band (300-3400 Hz) speech. In that time tele or videoconferencing applications with a need for more elaborate sound content have become more popular. The extra content necessitates a wider audio band, e.g. covering musical instruments, sound effects etc, than that necessary for speech.
Many codecs are defined for wideband (50Hz-7000Hz) and the first steps have been taken towards the standardization of conversational superwideband (50Hz-14000Hz) and even fullband (20Hz-22000Hz) codecs.
These new codecs support not only speech but also mixed content or music. Mixed content can mean advertising, ring tones, music on hold and even movie trailers.
In the case of teleconferencing advantage could be taken from the use of spatialisation, multichannel transmission and 3D sounds.
Papers are sought in order to help current ITU-T Recommendations evolve to consider these new bandwidths and content. The impacts may be classified in two main domains:
Methodological aspects

Bandwidth extension and binaural perception necessitate the consideration of several fundamental aspects on which ITU-T Recommendations are based.

- Loudness,
- Binaural modelling,
- Acoustical interfaces and consequences on artificial mouth, ears and test signals,
- Testing methodologies,

Extension of test methods to cover new dimensions such as sound clarity, localization of sounds, etc…

The challenge is to develop new methodologies that cover the complete audio bandwidth from narrow band to fullband on the one hand but also ensure compatibility with existing Recommendations.

Technological aspects

As a consequence of the evolution of the codecs, transmission techniques and core/ access networks (all IP, NGN, mobile), terminals characteristics should be reviewed to cope with new bandwidth values and multichannel aspects, implying an update of measurement tools

Artificial ears and mouth,

Terminal characteristics including softphones or any kind of multimedia terminal including all types of handsets, headsets or headphones with microphone or other acoustic interfaces.

Calibration signals and calibration methods considering monaural, diotic or dichotic presentation of sounds including speech, music and background noise e.g. with respect to listening levels.

The goals of the workshop are to address the issues above, to establish a constructive dialogue among universities, standardisation bodies and companies to combine efforts and skills to create standards for the benefit of all. The event will bring interested parties together from around the world to promote innovation.