

CONTENTS

- * New VoIP Front End MFE VIII
- * Trainings and Seminars 2007
- * ETSI VoIP SQTE's
- * Events: Retrospect and Pre-view
- * Audio Player and Headset Tests to EN 50332
- * Workshop and Exhibition "The Fully Networked Car"
- * Various News Regarding ACQUA
- * Product Preview: HHP III
- * H-QMON: New Firmware, New Features
- * ITU Focus Group "FITCAR" Begins Technical Work

New VoIP Front End MFE VIII

With the introduction of the new HEAD acoustics measurement front end MFE VIII it has now become much easier and more comfortable to analyze and optimize the speech quality of Voice-over-IP systems.

MFE VIII serves as a simple and efficient interface between VoIP devices (IP phones, gateways etc.) and the analy-

sis system ACQUA. It offers full support of the SIP protocol. The voice codecs G.711 (a-law, μ -law), G.722, G.723.1, G.726 and G.729 A/B are currently implemented. MFE VIII thus also allows the testing of wideband terminals and gateways.

The MFE VIII datasheet is available in the Telecom download section at www.head-acoustics.de.



Trainings and Seminars 2007

The HEAD acoustics training and seminar program for 2007 is to be extended by Entry-Level Trainings for the communication analysis system ACQUA. Depending on the knowledge of the participants different courses will be available. As in earlier years there will also be Advanced Seminars providing participants with practical tips and tricks regarding special topics such as VoIP or hands-free testing.

The trainings will take place in the perfectly equipped HEAD Training Center at our headquarters in Herzogenrath, Germany. They will be held either in German or in English. It is also possible to hold the trainings at the customers site if there are enough participants. In case of interest please send an email indicating the number of participants and their knowledge level to telecom@head-acoustics.de.



Seminar „Hands-free to VDA specification“

ETSI VoIP SQTE's: 4th Test Event Successfully Completed, 5th Event in Preparation

In cooperation with ETSI Plugtests™ (European Telecommunications Standards Institute) HEAD acoustics carried out the VoIP Speech Quality Test Event (SQTE) for the fourth time. The "4th SQTE 2006" continued the success story of the previous events and was again considered as very useful by the participants (leading manufacturers of IP gateways and IP phones): a 100% response rate from the feedback forms led to an average score of 4.7 out of 5.

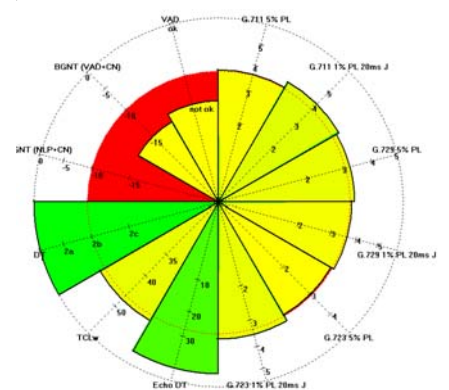
Compared to earlier SQTEs the test program was further improved and extended. The 4th SQTE stretched over a period of several months to accommodate for the individual time schedule requirements of the participants and to offer them best possible service and personal advice.

Thanks to the consulting support given by HEAD acoustics voice quality experts during the tests, culminating in detailed individual test reports, the SQTE participants got important hints on optimization possibilities for their own products. At the same time the anonymous report on all tested products provided them with a helpful benchmark comparison with their competitors.

The knowledge gained by the participants during the SQTEs leads to significant competitive advantages due to superior voice quality. The participants with the best test results amply use their results to reinforce their sales pitch.

The test methods used by HEAD acoustics during the SQTEs are now referenced by the new ETSI standard TR 102 648-1.

More information as well as the anonymous test report can be found at www.etsi.org and www.head-acoustics.de.



VoIP test result as "Quality Pie"



Intra-concha headset in anatomically shaped pinna (type 3.3) of artificial head HMS II.3

Audio Player and Headset Tests According to EN 50332

In France the fulfillment of the European standard EN 50332 which already exists since 2000 has recently been made mandatory by law. Other European countries will probably follow the French example soon. The standard specifies methods for the measurement of maximum sound pressure level as well as limit values for portable audio players such as e.g. radios, MP3 players and cell phones with corresponding features.

Even outside France only the conformance with EN 50332 can safeguard manufacturers of such devices and corresponding headsets against the increasing number of law suits filed by customers who demand compensation for hearing defects suffered during use. As most audio players and headsets are manufactured in Asia, conformance with EN 50332 is an absolute must in these countries too.

HEAD acoustics has therefore implemented the requirements of this norm into a corresponding measurement standard for the analysis system ACQUA. In combination with the front end MFE VI.1, allowing direct connection of headsets, measurements according to EN 50332 can now be carried out with or without the artificial head HMS II.3.

Events: Retrospect and Preview

Similar to 2005, the year 2006 again saw HEAD acoustics present itself at two major VoIP events: for a repeated time as exhibitor at the largest European VoIP event VON Europe in Stockholm (more than 3000 participants, 170 exhibitors, 250 speakers) and for the second time as test laboratory for VoIP.Germany in Frankfurt, which has developed into the leading VoIP congress on the German market (more than 45 exhibitors, 300 visitors, 40 speakers). At both events HEAD acoustics gave presentations entitled "Issues in Delivering Voice Quality" and "VoIP Speech Quality Tests".

While the exhibition part was predominant at VON Europe, VoIP.Germany, organized by DVPT (German Association for Post and Telecommunication) as well as the Frankfurt Chamber of Commerce entrusted HEAD acoustics with carrying out on-site "Live Tests". For this purpose the analysis system ACQUA was used to run a specified set of voice quality tests for selected VoIP products shown by exhibitors. The test results contributed to the "VoIP Award" given to the three best products. They were summarized in individual reports handed out to the participants after the event. The reports revealed to them the quality position of their products in an anonymous comparison and provided important hints on how to optimize the voice quality of their products.



"Live Tests" during VoIP Germany 2006

For 2007 both VON Europe and VoIP.Germany are booked again. In addition, the American daughter company HEAD acoustics Inc. already exhibited at Spring VON USA in San Jose (19-22 March, booth #1237). At VON Europe 2007, which will again take place in Stockholm (11-14 June), HEAD acoustics will contribute to the conference panel "Dual Mode Phones" in addition to exhibiting (booth #701). VoIP.Germany 2007 will be held in Frankfurt (30-31 October) and will again feature "Live Tests" carried out by HEAD acoustics.

As in previous years, the Telecom division also presented various new products at the 33rd Annual Acoustics Conference DAGA 2007 in Stuttgart (19-22 March). The structured DAGA sessions "Speech in Motor Vehicles I and II" were filled with numerous presentations on speech transmission, speech recognition, signal processing and testing of speech communication in vehicles.

A fourth event with HEAD acoustics Telecom participation, CommunicAsia 2007, will take place from June 19-22, 2007, at Singapore Expo, where HEAD acoustics will be represented by its local sales partner TME Systems (booth 3A3-10).



HEAD acoustics presentation on voice quality issues during VON Europe 2006



Register at www.von.com and use priority code "HEAD" to get a free expo pass!



Logo of the event

Workshop and Exhibition "The Fully Networked Car"

"The Fully Networked Car" was a major event on information and communication technologies in motor vehicles. Held parallel to the Geneva Motor Show in March 2007, it was organized by the World Standards Cooperation, consisting of ITU, ISO and IEC.

The event comprised a workshop from 7-9 March, accompanied by an exhibition (6-10 March) and a press day (7 March). It brought together key specialists in the field, from top decision-makers to engineers, designers, planners, government officials, regulators, standards experts and others.

HEAD acoustics GmbH not only sponsored the catering during the evening reception, but also played a key role in the organization of the event: Dr.-Ing. H.W. Gierlich, Head of Telecom Division, is Chairman of the steering committee and moderator of the opening session. In further sessions he introduced the new ITU focus group "FITCAR" (cf. last page) and held a speech on "Car hands-free optimization" together with three other HEAD acoustics experts.

The goals of the workshop were:

- to shed light on current questions facing the industry,
- to establish a constructive dialogue among all the stakeholders,
- to reach a better understanding between the telecommunication and automotive sectors,
- to combine their efforts and skills to create standards that are mutually beneficial.

"The Fully Networked Car" featured in the marketing of the Geneva Motor Show and is extensively publicized by the organizers ITU, ISO and IEC.

Detailed information on the workshop and the exhibition can be found on the ITU website (www.itu.int).

Various News Regarding ACQUA

Version 2.3 of the analysis system ACQUA is now available. Taking the requests and suggestions of many ACQUA users into account, the HEAD acoustics developers again achieved numerous improvements with regard to speed, ease of use and functionality.

Highlights of Version 2.3 are the support of the new VoIP front end MFE VIII as well as the following new features:

- Simultaneous search in several data bases incl. combined representation of curves in one diagram
- Storage of up to five mouth equalizations
- Automatic adjustment of playback level within set marks by speech level specification (for comparing signals with very different levels)
- Delta Relative Approach Analysis

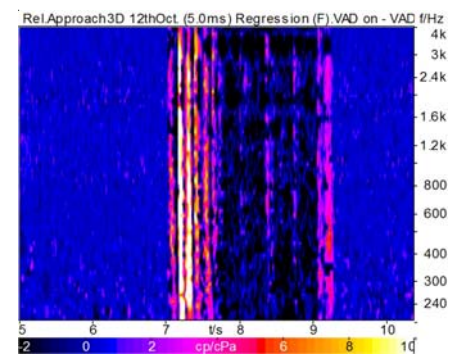
The latter is a continuation of the powerful Relative Approach Analysis. It serves to verify the "originality" of a transmitted and processed signals from the auditory perception of the human ear. The three-dimensional Delta Relative Approach Analysis allows to verify whether the user's expectations on the quality of the signal processing (e.g. with noise reduction) are fulfilled.

In previous Telecom HEADlines issues we already informed you on new developments with regard to ACQUA mea-

surement standards. As could be expected, further updates and new standards have been released in the mean time, summarized in the following overview:

- TIA 810 (Code 6772): Voice quality analysis of narrowband digital telephones; updated because standard ANSI/TIA/EIA-810A has been superseded by Version 810B
- HQS-mobile (Code 6776): updated again, e.g. now also fulfills the requirements of the Vodafone test specification
- HQS-IP gateways (Code 6786): contains test sequences required for IP gateways
- HQS-IP phones (Code 6787): contains test sequences required for IP phones

For most of the standards and testing tasks they entail, suitable ACQUA compact systems are also available. For more detailed information please do not hesitate to contact us.



"Delta Relative Approach" analysis example

Product Preview: HHP III

Just one year ago the handset positioning mechanism HHP II.1 which now supports handsets with a width of up to 93 mm was introduced in this newsletter. Now the new successor model HHP III which not only supports wide handsets but is also adjustable in all three axes has already reached the prototype stage and will be ready for production soon.

HHP III now fulfills all requirements with regard to the "Recommended Test Position" (RTP) specified by IEEE 269 as well as the latest draft of ITU-T recommendation P.64. For example, measurements



Prototype HHP III

according to ANSI/TIA/EIA-810B can now be carried out using the RTP position. In comparison to HHP II.1, HHP III moreover supports both "Standard Test Positions" (STP) according to ITU-T P.64 for pinna types 3.3 and 3.4.

As its predecessors the new HEAD acoustics positioning mechanism is a high quality product which fulfills all traditional expectations towards "Made in Germany". Its main advantages are:

- Support of all pinna types
- Robust and yet light-weight metal construction
- Good fixation and range of width of handsets
- Exact and reproducible adjustment
- Measuring gauge with display unit allows precise adjustment of application force

Moreover, HEAD acoustics also puts emphasis on security of investment: owners of the previous models HHP II and HHP II.1 will be able to upgrade to the functionality of HHP III at a low price, thus ensuring they will meet all requirements with regard to the positioning of handsets today and in the future.

H-QMON: New Firmware, New Features

In the course of last year new features became available for the HEAD Quality Monitor H-QMON with firmware version 1.1. This comprised e.g. the upload of signal files, the service mode or the pretrigger function. Additional new features become available with firmware 1.2 which has just been released: e.g. the "Play&Record" function now allows simultaneous playback and recording (duplex operation).

Below the most important new features in comparison with firmware version 1.0 are summarized:

- Service mode: allows to set the electrical input sensitivity range for earpiece and mouthpiece (output sensitivity of individual handsets can still be set in ACQUA or in Head Audio Recorder). Further options such as e.g. "Auto Record" at device activation, dialing etc. can also be selected
- Play&Record: simultaneous playback and recording (stand-alone or ACQUA frontend operation)
- Playback of recordings via earpiece extended by monaural playback of both channels
- Upload: signal files can be uploaded to H-QMON memory card
- Pretrigger: if H-QMON is switched on a 500ms sequence can be recorded continuously which is added in front of the complete recording as soon as the user starts a recording (selectable in service mode)
- Recording sample frequency now allows to select between 8kHz or 16kHz (in service mode)
- LCD lighting can be activated or set to automatic
- Clock can be set (in service mode)



H-QMON connected to IP phone, handset and headphone

ITU Focus Group "FITCAR" Begins Technical Work

In June 2006 the ITU study group SG12 established the new focus group "From/In/To Cars Communication". At its inaugural meeting January 2007 in Geneva, the focus group now short-named "FITCAR" set itself the goal to define new sets of requirements and specifications for hands-free communication in vehicles and performance evaluation of services based on speech technology.

An earlier recommendation drafted by ITU SG12 as well as the test specification for car hands-free terminals de-

veloped by HEAD acoustics and the German Association of the Automotive Industry (VDA) both served as starting points.

The focus group chaired by Dr.-Ing. H.W. Gierlich hopes for lively participation by members of other standards organizations in the automotive and telecommunication/ICT sectors.

Experts and individuals who are not members of ITU may also contribute to the work of "FITCAR". The next meeting of the group will be held in Geneva, Switzerland, on 25 June 2007.

The following areas are addressed in the future activities of FITCAR:

- In car communication: Quality parameters and testing methods
- Interaction of car hands-free systems with the radio channel
- Extension of the work to wideband car hands-free systems
- Special requirements/testing procedures for speech recognition systems in cars



Speech quality tests of car hands-free systems with HMS II.3

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