

Zukunft Bau

STRUKTUR / GLIEDERUNG KURZBERICHT

Title

Langfassung Titel: „Further development of a computer tool for the simple measurement of reverberation times of rooms for use in study, teaching, education and further education - follow-up to AkuMess ”

Background

kurze Beschreibung des Problems und des Lösungsansatzes
max. 450 Zeichen (mit Leerzeichen)

For teaching room acoustics typically only a small time frame is scheduled in academic education or further qualification. Nevertheless comprehension shall be achieved by bringing the participants into practical room acoustic analysis soon after giving them a short introduction into acoustical basics. The software is aimed to be an appropriate tool turning the participants' own notebook computers with just an attached low cost microphone into a measurement device.

Within a previous project (SWD-10.08.18.7-12.23) the software was developed and tested in its initial version.

Objectives

Beschreibung der Arbeitsschritte und des Lösungswegs
max. 4.300 Zeichen (mit Leerzeichen)

Major objective was the further development from 'AkuCheck' to 'AcouCheck'.

Porting

The first focus of the development was the porting of the software developed for the operating system 'Windows' to the popular operating systems 'OS-X', 'iOS' and 'Android'.

Multi Language Interface

The second focus of the further development was the 'internationalization' of the software, by adding the user interface in AkuCheck to a multilingual user interface, with an integrated German and English language version. The notebook software can also be provided by users with a third language of their own choice using a voice file.

Interface Design

As a third focus, resulting from the two previously listed areas a complete revision of the software interface and various program functions have been performed. The interface has been scaled and redesigned so that a parallel use of all four operating system versions in the teaching mode is possible, even with the input restrictions caused by the touch screen. The integrated sound absorber database has been completely redesigned and can now be updated over the Internet.

Testing

The newly implemented software functions were tested and the further developed software was practically tested in the running teaching company of the University of Wuppertal.

Conclusions

Beschreibung der geplanten Ziele und der erreichten Ergebnisse
max. 700 Zeichen (mit Leerzeichen)

The new AcouCheck software is available free of charge to all apprentices, learners and other interested users with projects:
<http://www.btga-arch.uni-wuppertal.de/werkzeuge/acoucheck.html>

Eckdaten

Kurztitel: AkuCheck 2

Forscher / Projektleitung: Dr. Detlef Hennings / Prof. Dr.-Ing. Karsten Voss

Gesamtkosten: 92.335,00 € €

Anteil Bundeszuschuss: 64.135,00 €

Projektlaufzeit: 24 Monate

BILDER/ ABBILDUNGEN:

Bildnachweis jeweils: D. Hennings, 51065 Köln, www.eclim.de

Bild 1: AcouCheck20_Seite1.jpg

Image caption: On page 1 of the user interface measurements are prepared (screenshot)

Bild 2: AcouCheck20_Seite2.jpg

Image caption: Page 2 shows oscillograms of the measured room impulse responses (screenshot)

Bild 3: AcouCheck20_Seite3.jpg

Image caption: Backward integration of logarithmic impulse responses is drawn on page 3 of the user interface (screenshot)

Bild 4: AcouCheck20_Seite4.jpg

Image caption: On page 4 of the user interface measured octave reverberation times and other measures are shown and compared to standardized references (screenshot)

Bild 5: AcouCheck20_Seite5.jpg

Image caption: Calculated effects of additional persons or absorbers on page 5 (screenshot)

Bild 6: AcouCheck20_Seite6.jpg

Image caption: An integrated sound absorber database is used for calculations (screenshot)

Bild 7: AcouCheck20_Seite7.jpg

Image caption: Documentation of the results for storage and export (screenshot)

Hinweis: Als Screenshots sind keine höher aufgelösten Bilder möglich