

## Bachelor-Abschlussarbeit

**Thema:** Comparison of the Individual Benefit of a Wireless Remote Microphone System (WRMS) in the Laboratory with the Situation in a Classroom

### Zusammenfassung

The intention for this work is to compare a measurement method to measure the individual benefit of Wireless Remote Microphone Systems, suggested by the EUHA guideline 04-06, with a realistic classroom situation. The guideline's measurement setup emulates a listening situation similar to a situation in a classroom, where the listener is assumed to be in a distance of 4 m from the speaker. Therefore a study is designed, in which the speech intelligibility of the participating subjects is measured in the guideline's setup and as well in a measurement setup in a classroom.

On the basis of a former study, conducted at the German Institute of Hearing Aids, with the same intention, a few changes in the classroom's setup are made.

To this end, the speech intelligibility of 20 subjects, with a symmetrical hearing loss of type "N3" (according to IEC 60118-15 Ed.1), is measured in both measurement setups.

As speechtest material, the Freiburger Einsilber Test, a monosyllabic speech test is used. The noise signal is an uncorrelated CCITT noise. Different conditions are measured with every subject. The conditions include different sound pressure levels of the noise signal, the hearing aids being connected to a WRMS or not and different settings in the hearing aid's microphone characteristics.

According to the results of former studies, the results achieved in this work show a significant difference in the speech intelligibility between the measurements with a connected WRMS and the measurements without a WRMS.

No significant differences in the speech intelligibility occur between or within the measurement setups for all conditions where a WRMS is used. So the simplified setup from the EUHA guideline is validated.

However, a significant difference between the two setups occurs for the measurement condition without the use of a WRMS. As the median difference is only 7.5 %, it is rated as not severe.

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