



## Advertisement

# Phonemic balance for listening test design

## *Bachelor/Master/Diploma Thesis*

---

Berlin, January 22, 2015

### Description

Nowadays, Voice over IP (VoIP) services have to be continuously monitored and there is currently a lot of effort put to improve the quality of the internet telephony. Hence, a range of listening tests needs to be conducted to get more detailed insights on how people judge the quality of transmitted speech. Such tests are usually limited in time so only a relatively narrow set of pre-prepared speech samples can be used. To reflect a typical call situation, the set of speech stimuli needs to be balanced in such a way that it will represent, in the best possible way, a distribution of the sounds (phonemes) typically used in particular language.

The goal of this study is to create a tool which will enable to determine the phonemic distribution in a given text and also check how is it different to the general distribution of German language. To do so, an analysis of a large German corpus (e.g. in form of collection of texts) needs to be performed in order to create a statistic describing how often a given phoneme occurs in the material. There are also existing solutions which may be used here (see literature).

### Requirements

- Course of study: Electrical Engineering, Computer Science, Acoustics, or similar
- Good programming skills in Matlab/C
- Good problem-solving skills
- Good communication skills

### Literature

- Demenko, Wypych, Baranowska, "Implementation of Grapheme-to-Phoneme Rules and Extended SAMPA Alphabet in Polish Text-to-Speech Synthesis", 2003
- Raake, Katz, "SUS-based Method for Speech Reception Threshold Measurement in French", 2006
- Phoneme recognizer, <http://speech.fit.vutbr.cz/software/phoneme-recognizer-based-long-temporal-context>
- Festvox project, <http://festvox.org/bsv/c2176.html>

### Contact

Michał Sołoducha, [michal.soloducha@telekom.de](mailto:michal.soloducha@telekom.de)

- Assessment of IP-based Applications, <http://www.aipa.tu-berlin.de>