

Monitoring the Quality of GSM/UMTS Voice Services

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Voice services for mobile phones are a highly competitive market. Thus Swiss telecommunication providers spare no efforts to optimize between their costs and what they see as customer benefit. However, although highly undesirable for customers who pay for these services, network failures such as no access to the net, call drops, and poor voice quality are still present. In this project we lay the foundation to conduct provider-independent research to monitor the performance of all major Swiss voice service providers in terms of coverage and failure rates and link these findings to customer binding.

Further information about the project could be found at our website at the following URL: <http://vmthuban.bfh.ch/GSMTest.html>

This project, also known as the GSM Tester Project, is a customer-based field research; hence, customers are directly involved. Necessary data is collected from customers through a 3-weeks-campaign. Subsequently, the data is evaluated from a provider-independent perspective.

To gather data from campaign participants, we employ the GSM Tester, an Android-based mobile phone application. GSM Tester was initially developed by Stefan Schöb and Reto Zigerlig. For the campaign of this project, we extended the GSM Tester with new features. The application now

logs technical data about the mobile phone and calls; besides, it records the customers' feedback in terms of manually entered ratings on different types of mobile interviews on user perceived quality of service, instantaneous emotion after a network failure and customer binding.



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Collected data by the GSM Tester is sent to our pre-configured server at BFH. Finally, data is extracted from the server and evaluated.

Therefore, the GSM Tester Project consists of the following 3 phases:

- Preparation phase: mainly includes defining the evaluation framework, upgrading and testing the GSM Tester, setting up the server, preparing the campaign and developing the data extraction engine.
- Data collection phase: is the 3-weeks campaign where data is collected from participants' mobile phones.
- Data evaluation phase: after the campaign is finished, data is retrieved from the server and evaluated through a pre-defined evaluation framework.

After the completion of the project, all campaign participants, in compensation for their efforts, receive individual recommendations on which provider and which tariff plan optimizes their cost and network service quality. Participants get the technical report of the work upon request.

