

# AV QoX-Audio/Video Quality of eXperience

Television is changing radically. With more intelligence, interaction and converged infrastructure, tomorrow's television will become an element of a new multi-medial environment. More and more consumers switch to common programmes (not depending on time and location) provided by specialized suppliers.

Satellite and cable network operators lose their exceptional standing as conveyors due to the fact that TV-programmes are being broadcasted directly via internet.



In the increasing complexity of television, knowledge of service-quality is a decisive factor in the fight for market shares and customer satisfaction. This is precisely when "AV QoX" comes into play. The quality measuring system for IP-based applications was developed by the research group Data Network of the university of applied studies in Cologne and zafaco GmbH.

The aim of this ZIM project sponsored by BMWi is the development of a new technologic universal and distributed quality measuring system for IP-based services (AV QoX) such as IPTV, WebTV and VoD in Next Generation Networks.

The subjective and objective quality of media data is diverted from the current IP data stream (live and non-reference measures). It is not only based on system parameter analysis and quality of service (Quality of Service QoS), but also on an analysis of the Video Codec Layers with the help of "deep packet inspection".

The structure of the distributed measuring system allows regarding all layers of a NGN, from content, core, distribution and access network to an end-user perspective.

In order to realistically illustrate the client in a simulation, a mix of several services such as VoIP, highspeed internet and IPTV is accomplished with AV QoX in context of a continuous IPTV Benchmark.

- Universal & distributed quality measuring system for audio/video services
- Objective and subjective quality statements
- Reproduction of application scenarios (STB navigation, zapping)
- Triple Play Test with different load conditions (simultaneous usage of VoIP, highspeed internet and IPTV)



**Cologne University of Applied Sciences (CUAS)**

Inst. of Communications Engineering  
Data Networks  
Betzdorfer Str. 2  
50679 Köln

**Prof. Dr.-Ing. Andreas Grebe**  
**Oliver Portugall M.Sc.**

**Stephan Küffner M.Sc.**  
info@avqox.de



Moranger 3  
85737 Ismaning

**Christoph Sudhues**

**Oliver Schöttler**  
info@zafaco.de

With the kind support of the  
BMW*i*

Supported by:



Federal Ministry  
of Economics  
and Technology

on the basis of a decision  
by the German Bundestag



**Hall 9**  
**Stand D34**