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1. Executive Summary

This deliverable covers the laboratory testing of the so called phase I demonstrators carried out in the DTV4All project from the start of the project up to month 18 of its duration (the end of 2009). The phase II demonstrators which are currently under construction and their testing will be addressed in a later deliverable called "Second phase Emerging Access Service Demonstrators" in month 26 (D3.5). The current document elaborates the technological approach to realising the phase I demonstrators as well as their respective test set-ups and methodological approaches. Not all test results for the phase I demonstrators are documented in this deliverable because some of them are not yet evaluated. Given the available resources executing all the imminent tests in accordance with the time schedule was prioritised over evaluating them. Furthermore, three of the laboratory tests took place in December 2009 and the results were simply not available in time for timely submission of this document. All the test results of the phase I demonstrators will be documented in D3.5.

At this stage what can be reported is that the test of the **phase 1 Demonstrator of user interfaces for text-to-speech for blind persons** in the summer of 2009 (by RBB/IRT) definitely showed that blind users urgently wish to use such Text-to-Speech engines and that the test provided useful hints as to how these audio interfaces should be conceived.

As to the test of the **phase I Demonstrator of enhanced text services** (a barrierfree HbbTV-Text service) as tested in December 2009 (by RBB/IRT), the barrierfree version was welcomed with some enthusiasm by its sight impaired users. The tests provided very useful hints as to where the barrierfree features need improvement but the overall response was extremely encouraging as to an improvement of access due to digital technologies.

Concerning the **pretests of "Clean Audio"** sound tracks associated with Digital TV transmissions, it turned out that while some testers explicitly reported an improvement in audibility others did not seem to experience an improvement. The tests showed clearly that it is difficult to decide on optimum parameters for clean audio, given the extreme heterogeneity in degrees and occurrences of hearing impairments. Hopefully the main test (in German and in Catalan in December 2009) will provide more clarity a) on the general usefulness of this technology for hearing impaired people and b) on how to provide optimum technological solutions. Here the project team is still in a learning phase.

The tests of the demonstrator of **Video Signing** (Phase I) and of **Audio Description** via IP will be continued and carried out in the spring of 2010.

The demonstrator of **Reduced Playback Speed** is available in various versions from the World Wide Web. In accordance with the description of work of the DTV4All project and the detailed project work plan reported in deliverables D3.1 and D3.2, the selection of appropriate test material will start in 2010 and processed test material will be available for first laboratory tests in March 2010. Final results are expected in midyear 2010 and recommendations will be included into the next deliverable D3.5.

2. Introduction

This document focuses on a class interfaces for barrier-free Digital Television (DTV) which is subject to user testing as part of the work of the DTV4All project. Namely, the class of interfaces called "emerging demonstrators". An interface for barrier free DTV is called an emerging demonstrator if it meets the following criteria:

- It represents the state of the art with respect to the technologies used

- It provides services which address the needs of people with an impairment

- It delivers services that are not yet on the market but which are expected to become available in the near future

A service delivered by an emerging demonstrator is called an emerging service. At the time this report was compiled a complex selection process had already taken place to identify emerging services. This process is described in detail in DTV4All project deliverables D3.1 and in D3.2. The DTV4All project makes a clear distinction between mature and emerging access services. In contrast to mature access services the so-called emerging access services are dependent upon the availability of new platforms and devices, in particular, interfaces that are currently emerging demonstrators. The emerging demonstrators subject to user testing by the DTV4All project were selected on the basis of being representative of the latest technical developments for ensuring the optimal usability of access services on digital television. Moreover, the DTV4All project has to deal with new developments arising during the lifetime of the project. One example is the emergence of a new subtitle standard last year when the project had already started. It is a matter of fact that this epoch is characterized by the rapid introduction of new techniques for the delivery of access services for DTV. To deliver useful outputs the DTV4All project has to take into account the latest technical developments relating to access services for DTV and take full advantage of them.

Seven main types of demonstrators were identified in a previous deliverable with respect to emerging access services:

1. Demonstrators of enhanced subtitling

2. Demonstrators of enhanced text services

3. Demonstrators of video signing

4. Demonstrators of clean audio

5. Demonstrators of enhanced audio description

6. Demonstrators of reduced playback speed

7. Demonstrators of user interfaces with text to speech functionality

In this document these seven types of demonstrators are treated as delivering seven different and independent types of emerging access service that can be demonstrated separately. Two phases to this work have been defined: a first phase comprising the demonstrators already displayed by the DTV4All project at an exhibition in 2008 (an e-inclusion event Vienna) and at exhibitions in 2009 (IBC in Amsterdam and IFA in Berlin). A second phase comprising demonstrators which at the time this document was written were under construction and which will not be delivered in 2009, but are expected to be ready in 2010 and are to be displayed at exhibitions in 2010.

The phase I demonstrators (existing in 2008 and 2009) are:

*   A demonstrator of clean audio in the German and Catalan languages

*   A demonstrator of user interfaces for text to speech

*   A demonstrator of enhanced audio description

*   A demonstrator of enhanced text services

*   A demonstrator of video signing

Demonstrators foreseen in phase II (expected in 2010) are:

*   A demonstrator of enhanced subtitling

*   An enhanced demonstrator of video signing

*   A demonstrator of reduced playback speed

*   An enhanced demonstrator of audio description

This document describes tests carried out by the DTV4All project up to the end of 2009 and future tests which are expected to be undertaken by the project in 2010. The tests which can not be carried out in 2009 are addressed in this document. In the case of "Clean Audio" some pre-tests were undertaken first. This was to gain first hints as to the adequate filtering parameters and the selection of optimum material. All tests were finished by the delivery date of this document, but the evaluation and analysis of the test results will be contained in the next deliverable D3.5.

Most of the emerging demonstrators to be subject to user testing in the DTV4All project are ready or almost ready for use in laboratory tests and are described in this document or were already described in earlier project deliverables, see D3.2 and D3.3. Tests here mean the

gathering of feedback from users from the respective target groups for the different services. The different services need different demonstrators which are tailored to the users suffering from different sensory impairments, e.g., a hearing impairment or sight impairment.

The tests undertaken of "emerging access services" are laboratory tests undertaken with small groups of people. This lies, of course, in the nature of things as the demonstrators are simply test demonstrators which are not yet on air because the availability of the necessary equipment is limited. Another issue which limits the scope of the tests is the set up time of the tests: It takes much longer to set-up non-mature hardware and software than mature hardware and software. These facts result in tests with smaller groups as compared to the field tests of mature access services carried out by the DTV4All project. This means that the statistical significance of the user tests of emerging services less than that expected from the user tests of mature services. However, with about 10 carefully selected users per test, the tests of emerging services can be considered as being representative. The results obtained have to be considered as indicative of the likely demand for and expectations of the innovative services provided.

3. Tests with a Demonstrator for Video Signing

Partners involved: Brunel, IRT, RAI, RBB

3.1 Introduction

DTV4All demonstrated in 2009 a hybrid broadcast/broadband approach to delivering a video signing service. A signer video is transmitted synchronously with the broadcast of the programme being signed via a separate broadband Internet connection.

3.2 Situation according to the work plan

A first prototype demonstrator based on the SAVANT project prototype platform was available in 2008 and was improved on and duplicated in 2009 by IRT and Brunel. Towards the end of 2009 a sample of this prototype was transferred to RAI which will undertake laboratory tests and user tests in December 2009. Unfortunately the results of these tests will come too late to be addressed in this document. Results are expected to be available at the beginning of 2010 and will be reported in Deliverable D3.5.

3.3 General description

Sign language on television is only comprehensible to a very small proportion of the viewing audience. People dislike the idea of a picture partly obscured by deaf signing. For this reason signed programmes are generally scheduled at unsocial hours.

The DTV4All prototype platform, based on hybrid broadcast/broadband technology, can be used to deliver the deaf signing access service as a closed (elective) service on digital TV channels. This means that the sign language interpreter can be activated or disabled by the user.

The window in the DTV screen showing the sign language interpreter can be moved and resized on the screen allowing the user to decide the position and size of the interpreter window.

Fig 1: Examples showing how the signer can be positioned on the screen

Any change in technology, especially where a consolidated service is concerned, must be carefully tested. In this case, a significantly improved access service is delivered, offering new features and functionalities.

3.4 General Test description

The tests seek answers to two important issues:

1. Response of the users to the new service:

   The aim of this test session is to understand if the service is generally accepted and figure out an overall evaluation. The test questions allow various aspects to be investigated like the "level of satisfaction", which features are considered more important etc. For example, the "level of satisfaction" is a parameter based on multiple responses from "non useful" to "very useful".

2. Functional requirements:

   This test session seeks to determine the functional requirements of the emerging access service with the aim of defining how the actual service should be designed to meet the requirements of its users. The test questions, based on multiple choice answers, are designed to determine the requirements for a wide range of features like the best position of the interpreter window on the screen, the preferred size of the window, if the size of the window should be automatically calculated by the system on the basis of screen size and viewing distance etc.

The tests will be concluded with an investigation of the feasibility of a possible future sign language interpreter service for mobile devices. The study of technology required by this service is not included in the DVT4All project but this test session is considered a good opportunity to gather some preliminary information about the potential appeal of such a service. The aim is to

figure out if a translation into sign language presented on a standard hand-held device like a mobile phone or smart phone would be valued by its potential users.

Fig 2: Example showing how a sign language interpreter is presented on a mobile phone over a video stream that is delivered simultaneously to a standard TV set without the interpreter

3.5 RAI Video Signing Test details - description of the test setup and logistics

The test will be carried out in the subjective assessments room at the RAI Research Centre and Innovation Technology in Turin (Italy).

The room will be equipped with three 16/9 TV monitors with different size: 14", 28" and 42". This will help to evaluate if and how the screen dimensions influences the choice of the users with respect to the interpreter window position and size.

A remote controller (wireless computer keypad) will be provided to users to control the interpreter window position, dimension and activation, when required.

3.5.1 Test session details

The questionnaire will be printed on paper. The questions being multiple choice questions, the user will indicate their answer by marking the preferred answer with a cross.

A free text field at the end will be used to collect comments, notes and suggestions.

The test sessions will be supervised by specialized personnel. They will give an explanation of the purpose of the test and instructions on how to indicate the preferred answer and operate the remote controller when required.

The operator will start the test session manually following the process set down and collecting the questionnaires compiled.

3.5.2 Participant profile

The test is designed for signing deaf people (deaf persons who use signing as their main language) and the test will involve a sample of the intended users of the service.

 The test participants will number about twenty-five. The information that will be collected is considered enough to outline a trend on a statistical basis.

3.5.3Analysis of the results

The final report on this test will point out various aspects: first of all an average result for each question will be calculated. Then the results will be used to figure out the different needs of the intended users of the service. For example there is a question asking which kind of programmes the users are more interested in. Analyzing the results of the users who declare their interest is "sport programmes" it's possible to outline a profile of the needs of this group. On the questionnaire the participants are also requested to provide some personal information on their gender, age, family, etc. This additional data will allow a second level evaluation, analysing the needs of users on the basis of their age or gender. It will be possible to define different user profiles, for example figuring out the needs of users on the basis of age ranges. This will allow default parameters to be defined for each group of users, allowing the decoder installed at user's home to be set-up according to the viewing preferences of the user on the basis of their age, gender, and profile.

3.6 Tests foreseen at RBB in 2010

In Deliverable D3.2 the following aim was identified for the phase II enhanced demonstrator for video signing: "DTV4All will demonstrate in a second phase a broadband/broadband approach, where the signer video is transmitted synchronously with the transmission of the programme being signed over the Internet via a separate Internet link where the Phase II Client comprises a Hybrid DVB-S/Digital Subscriber Line (DSL) receiver with CE-HTML browser (simultaneous decoding of the two video streams etc., optional synchronisation of the signer and the programme)

This plan was modified due to the following reasons: the new hybrid receivers currently emerging on the market are not able to decode two parallel video streams, an important pre-requisite for a hybrid broadcast-broadband solution. Furthermore they do not support synchronization of multiple video streams even if they are delivered on the same network. Now work towards an enhanced video signing solution will be done along two strands:

1. Strand One: A demonstrator will be set up by IRT which shows an all IP-solution where the user can access a video with a built-in signing video on demand via the IP-connection of a hybrid device. The underlying application for this will be based on HbbTV.

2. The HbbTV-specification for synchronous hybrid broadcast-broadband solutions will not be realized as the technology is still not available. However it will be prepared by finding out the important parameters with the help of user feedback. The parameters in question are:

- Synchonisity

- Positioning

Both strands of work will be tackled in a user test conducted by RBB in the summer of 2010.

As to strand one, the users will test the respective HbbTV application to find out a) how they would generally like such an approach and b) how user friendly and suitable the application for accessing such a solution is.

As to strand two, the users will test a simulated broadcast-broadband solution in order to determine the parameters and finally to have detailed input for a future HbbTV specification.

4. Tests with a Demonstrator of Clean Audio

Partners involved: IRT, RBB, TVC, UAB

4.1 Introduction

The DVB standard allows several audio tracks to be assigned to an MPEG video/audio stream. This is the starting point for providing clean audio technology. "Clean audio" addresses the fact that often the main information of a soundtrack, the dialogue, is mixed with ambient noise or music. This makes it more difficult for hearing impaired people to understand the dialogue. "Clean Audio" or also "Dialogue Only" means that the soundtrack is "cleaned up" and that the filtered dialogue is delivered without any other significant audio components in an extra audio channel provided by the broadcaster. As to the delivery, the DTV4All project will focus on traditional broadcast distribution platforms like satellite, cable and on-air networks.

It is expected that clean audio is a service that could be of help for people with a slight or medium hearing impairment because many of these people feel disturbed by ambient noise. This is to be examined in the DTV4All user tests which are to be held both with German and Catalan speaking user groups.

An implementation of "clean sound" by the DTV4All project based on a proprietary IRT solution was demonstrated at the European Ministerial e-Inclusion Conference 2008 in Vienna.

4.2 Technological Approach

'Cleaning-up' the audio for the tests was done with the "Cedar 1500". This equipment allows spectral components not belonging to a human voice to be attenuated and has a set of faders to control spectral noise gates. If aligned correctly the noise gates only pass the speech components contained in a certain signal. Otherwise, they attenuate the passing signal. This alignment has to be set up by the operator (the broadcaster). The operator has to keep an eye on the spectral response of the speech signal and its correct level of loudness. The Cedar is capable of working in real time but each acoustic situation in a chosen video requires special alignment. This has to be achieved manually. All the test material used in this project was thus processed manually by IRT in the described manner.

4.3 Test Set Up and Methodology – Pre-Tests for the German Language Version

For the German Language Demonstrator two pre-tests were carried out. They were necessary to find out with the help of target users how far attenuation should go because "cleaning audio" also means decreasing audio quality. The first pre-test took place in April 2009 and the second one took place in September 2009 and involved two additional test persons in order to get a wider scope. The main test incorporating the pre-test findings was set for late November, early December 2009. RBB provided test material from its archive for both pre-tests and the main test first at the beginning of 2009 and then again in August 2009. This material in the German language was processed by IRT in preparing the pre-tests and the main test for the German Language version of the demonstrator.

The testers for the two pre-tests were recruited from the group of DVB-Subtitle field test testers of RBB. Pre-test one had three testers, pre-test two had four testers. Two of the testers were identical in both tests.

Tester 1 and tester 2: hearing loss of 80 to 95 percent

Tester 3: hearing loss of 60 to 80 percent

Tester 4: hearing loss of 60 percent

Tester 5: hearing loss of 20-40 percent

For both pre-tests the samples prepared by IRT were sent out to the test persons on a DVD, so they could run the test in their home environment. The testers could access the sample titles through the DVD menu. The questionnaire (see Annex 10.2) comprised questions on each of the six samples, regarding the general audibility, the respective distinction and evaluation by the user.

In Pre-Test 1 the testers had to accomplish six tasks. The first three tasks were intended to find out about the acceptance of different degrees of filtering or of modified audio in general. The first task encompassed listening / viewing to a 1:38 minute film clip. The audio of this film clip alternated after 30 seconds from the normal version to processed ("clean") audio and then, again after 30 seconds, back to the original audio. The second task was to listen to this same film sample with the original audio. At last (task three) the test person had to listen to this sample with filtered audio only. In each of the tasks the testers had to judge the comprehensibility by voting with school marks. The final three tasks of pre-test 1 were designed to find out how far strong noise rejection might go as it diminishes audio quality of the dialogue parts, too.

In the pre-test different grades of cleaning the speech signal as well as different sound levels in speech pauses were tried out.

The set-up of Pre-Test 2 was identical to the first one. Six video clips were presented to the test persons, incorporating alternating audio versions (tasks 1 to 3) as well as successively different

filter levels. As in the first pre-test the first three tasks were designed to find out about the acceptance of filtered audio in general. For the second test some impairing tonal components were removed by the sound-cleaner called "Izotope", as it turned out to have better results for certain kinds of impairing sound components than the Cedar. Further level alignments were applied in the 2nd test only. Big level differences are known to be annoying to hearing impaired people.

4.4 Results of Pre-Test 1

4.4.1 Summary

Summed up, all the testers were able to distinguish between filtered and unprocessed audio, although it was not always audible to them which version was actually playing (clean audio or original sound). Only one person recognised explicit differences and judged the clean audio dialogue as understandable but the other two persons found speech (dialogue) in all the different versions (be they clean audio or original sound) not understandable enough. The understanding of "cleaned" speech worsens sometimes, once it even was evaluated as having nearly painful "sizzling". A permanently cleaned audio was preferred to filtering dialogue parts only. One person prefers a moderate filter level in order to avoid an unnatural sound. Some of the testers stated that they tried different devices one after another, such as their hearing aids (as an *adjustment* to the individual hearing impairment) and headphones on high volume (as a *compensation* of the individual hearing impairment).

4.4.2 Conclusions drawn from pre-test 1

There is no clear degree of "cleanness" suitable for all hard-of-hearing persons. The demands are very heterogeneous. Because of the many different degrees of hearing impairments it is difficult to create a universal rule from the test. Therefore, the conclusion was drawn that it seems to be necessary to make speech as "clean" as possible. In the future the audience should have an option to pad more or less ambient sound probably in speech pauses.

4.5 Results Pre-Test 2

4.5.1 Summary of results

Summed up, the test persons drew the conclusion that the pre-test samples were not at all optimal. The levels of audio filtering and the unprocessed audio were not easy to distinguish, so that the testers had difficulties in weighting the different audio aspects. Once again it must be said that some of the test persons were stating that sometimes audio filtering even influences speech in a negative way so that it becomes even harder to understand compared to unfiltered

audio. Sometimes the filtered audio was judged as sizzling, hard sounding and losing some of the speech intonation. Surprisingly there is only one opinion (out of five persons) expressing explicitly that the chosen approach is working well for hearing impaired people.

Also the range of chosen video samples met with criticism. Two of the samples lacked appropriate dialogue content so that it was very difficult to evaluate the rare audio stream. This led to selecting the samples for the main test even more carefully.

4.5.2 Conclusions drawn and fed into the main test

The methods and technique used for the "Clean Audio" sound track associated to the digital TV transmissions seem to be highly accepted by some of the hard of hearing listeners, while others do not experience any improvements in their understanding. The pre-tests made clear that the test material needs to be carefully selected so as to contain enough ambient noise. Furthermore, the differences presented for the comparisons in the main test should be more significant. The sample length from 20 to 30 seconds was accepted by the test persons and will be used for the main tests.

4.6 Test Set-Up and Methodology for the German Language Version main test

For the final (main) German test nine different video samples were chosen, again presented on a DVD. Taking into consideration the findings from the pre-tests, the test persons were asked not to change hearing aids and head sets but keep their "usual living room procedures" in order to get a more realistic picture. And again, users had to compare "clean" with the unprocessed audio output, using two different approaches:

a) Comparison of two different clean audio versions one after another in a single sample video

b) Comparison of the unprocessed audio with two or three versions of differently filtered audio in a single sample video.

Each sample video also incorporated tasks about the general audibility, the recognition of differences between the several versions as well as to decide about the part with the subjectively better audibility, either clean or normal. Results and conclusions are expected in the spring of 2010.

4.7 Test Set-Up and Methodology for the Catalan Language Version test

Test Material and footage were received by IRT from TVC at the beginning of 2009. The test itself is similar to the German pre-test 2.

Material in the Catalan or Spanish languages was processed by IRT for UAB up to the end of October 2009. Tests were carried out with several test persons in December 2009 or will be carried out in the spring of 2010 at UAB. Results and conclusions are expected in the spring of 2010.

5. Tests with a Demonstrator of User Interfaces with Text to Speech (TTS)

Partners involved: IRT, RBB

5.1 Introduction

DVB-SI data contains a lot of electronic programme guide (EPG) information. This information covers the title, start and end time as well as abstracts of scheduled programmes. Such data form the basis of a „Talking EPG" or „Audio User Interfaces" where text data is transformed into speech. Visually impaired and blind users can benefit from such voicing of not only of EPG screen prompts but also of Teletext news, channel selection options, or recording facilities. The navigation by hand-held remote control devices is considerably assisted. No such Text-to-Speech based set top boxes are on the market yet. User tests in the DTV4All project were conducted using the so called 'Accessible Multi Media Entertainment Center' (Ammec). This equipment is a multi media PC provided with a TV receiver card, either for DVB-S, T or Cable. All menus being read out to the user, so that sight impaired and even blind people can navigate and access the services. This rig is available at the moment in the German language only. The "Ammec" device was shown at the DTV4All booth at IBC 2009 with the assistance of Christoph Bungard, a blind member of the DBSV (Deutschen Blinden- und Sehbehindertenverband e.V. / German Association of the blind).

5.2 Technological Approach

The Ammec is a standard personal computer in a desk top case measuring 42 x 9 x 43 cm. It is supplied with a standard TV plug-in card. It is possible to record up to 90 hours onto the hard disk. When a satellite dish is connected to the Ammec TV and Radio programs can be recorded.

The novelty of the Ammec is that every output which usually is shown on the PC monitor is converted from text into synthetic speech. There is no connector for a PC monitor but any TV set can be hooked up via a SCART or Cinch connector. When loudspeakers are plugged into the line out jack of the Ammec even a TV set becomes obsolete which a blind person does not actually need.

The advantage for disabled users is that they are able to navigate through the menus and the EPG. In addition, access to Teletext is provided through speech output. Summed up, the Ammec offers the following functionalities:

• TV-Receiver

- Harddisk-Recorder
- Teletext
- EPG-Reader
- DVD-Player
- Audio-Player

5.3 The user tests

5.3.1 Test Set-Up and Methodology

Tests with the German speaking Ammec were carried out at RBB in June and July 2009 with sight impaired test persons. The envisaged laboratory test focused not at validating the Ammec as such but on generally on validating "Audio User Interfaces" (AUI) for TV sets / digital receivers provided with the help of a text-to-speech engine (TTS). The Ammec was used for the test because at the moment there are no TTS based set top boxes on the German market. The laboratory test had two main aims:

General aim:

- To find out the *general acceptability* of such a service: Are spoken or audio interfaces generally welcomed by the target group, do "they make sense to the users" in terms of achieving improved access to digital television?

Specific aim:

- To find out how such a service should be designed in order to meet the requirements of the target users mainly in terms of the scope of functionalities but also in terms of basic navigation issues.

In the end, the test results, part of the overall DTV4All project analysis of access services in Europe, are to be presented to the relevant industrial and standardisation bodies. The overall objective is to have TTS technology that is tailored to the requirements of the target group integrated into digital television set-top boxes as a standard facility, bearing in mind the overall objective of DTV4All: inclusion.

A full week was dedicated to the tests. Christoph Bungard, a blind online editor, assisted RBB in conducting the tests on a freelance basis. The test week from 30.6.2009 until 3.7.2009 was structured as follows:

Tuesday, 30th June: A two hour session for all testers was held. Here, the Ammec was introduced, questions were asked etc. Each tester received a remote control to take home. Two sessions were offered, one in the morning and one in the evening to cater for the testers' different time schedules.

Wednesday, 1st July: Testers took about one hour at home to study the Ammec manual with the help of the remote control. An audio manual was produced for the testers who do not use TTS for their PC.

Thursday, 2nd July: Individual test sessions were conducted with the seven Berlin users at the RBB premises in Berlin. Each test took about one to one and a half hours.

Friday, 3rd July: Likewise, tests were conducted with the four users from Brandenburg at the RBB premises in Potsdam.

Combining the actual individual validation session of each user with a general introduction to the device beforehand was to allow for a more realistic test result: RBB think that the device is too complex to test it straightaway in an individual session without any previous knowledge. Christoph Bungard, the blind advisor to RBB, told us that it took him some time to get to know the Ammec. Usually, people would take some time if they had such a new device, use the manual etc. to get familiar with the different functionalities. In our case, the idea was:

- to give a general short introduction

- then to allow for people trying out the remote control at home (unfortunately we were not able to provide each tester with the actual device) while listening to the manual and

- finally to hold the individual user test session at the end of the test week

RBB think this approach offered a good compromise which did not overburden the testers and still provided valid results on how they dealt with the audio Graphical User Interface (GUI) – not knowing the Ammec too well, but well enough to perform the tasks of the tests.

The Potsdam individual tests took place in room 202A, EP1A, at RBB in Potsdam. The room is normally used as an office. Any superfluous office materials or equipment was removed to have barrier free access. The office was kitted out with a table, on which a TV set and the Ammec were placed as well as two chairs – one for the tester and one for the interviewer. The room also had a table with refreshments. This room has a (two-way) window to the neighbouring office. The person accompanying the tester could sit in this office along with other team members and observe the testing session. Refreshments were provided. The Berlin tests took place in a room in a pavilion at RBB in Berlin (Room FSZ 03.01.130). Different from the room in Potsdam this is not an office room but a spacious meeting room. It was equipped likewise.

5.3.2 Method: Information gathering in the individual user test sessions

a) General objective: Find out general acceptability of audio GUIs: Are spoken or audio interfaces generally welcomed by the target group? To gather the information needed to answer

the *general objective* a direct method was chosen. The testers were asked respective questions by the interviewer after having tested the Ammec and having fulfilled the tasks.

b) Specific objective: Find out how such a service should be designed in order to make sense to the target users mainly in terms of the scope of functionalities but also in terms of basic navigation issues. To gather the information needed to answer the *specific objectives* the method employed was both indirect and direct. Indirect: One important part of each individual user session was fulfilling various tasks referring to handling the Ammec. The meaning and objective of each task was clearly defined. The users' success or failure in performing a task provided some evidence if the exemplary technological approach of the Ammec is convenient and user friendly. It also had the potential to show weak points of the Ammec. Furthermore, free spontaneous comments of the users showed which features and functionalities they liked or disliked. Fulfilling the tasks (success) and the problems being encountered was measured by the usability team. The tasks were quite small and focused, thus enabling the gathering of precise information.

For the test, four functionality areas were selected as representing the most important basic functionalities:

- Watching TV and using the EPG

- Using Teletext

- Recording TV programmes and listening to the recorded programmes

- Listening to and recording radio programmes

There were tasks for each of the four areas, 12 tasks all in all.

Direct: After fulfilling the tasks the users were asked questions to evaluate their test experience and to find out about wanted qualities and functionalities. There were open questions first (like, dislike most) followed by specific questions that offer a multiple choice, covering each major aspect of a TTS based system for access to digital TV services.

5.3.3 The individual User Test Session

The users were welcomed and introductions made. They were offered refreshments and it was explained to them, in simple terms, what was to happen, that we were testing an exemplary technology and that our ultimate aim is to find out if such / a similar technology is of use to them and what it should look like according to their opinion. To help put the user at ease, the interviewer chatted with him or her for a couple of minutes. The interviewer explained the test procedure. (This took 10 minutes)

The user was then asked some pre-task questions about computer and TV usage and ownership. This was to find out about media and computer literacy. The testers were encouraged to say whatever they would think, that it would help if they said aloud what they think, the more, the better. They were also encouraged to say what they do not like because that would also be very helpful. (This took 5 minutes)

The users were then asked to fulfil the tasks one by one. The interviewer observed and guided the tester through the tasks, giving help only if necessary. Each task was explained in advance and the users were asked if they had understood the task. The interviewer(s) observed the tester, noting down any comments and questions made but not questioning the tester directly about each task completed. The users were gently encouraged to voice their opinion if necessary. (This took 30 minutes)

Finally, an interview was conducted that combined questions evaluating the experience with questions. (This took 20 minutes)

5.3.4 User Profiles

The tests were conducted by RBB with the help of nine blind users and one sight impaired user. The users were recruited with the assistance of the Associations of the Blind in Berlin and Brandenburg. In March 2008 an appeal was issued asking for test participants. The criteria, the candidates were to fulfil, were that they were interested in the media, that they were computer literate and that they were not to know the Ammec beforehand. With one exception – a sight impaired woman – only fully blind testers were chosen in order to have at least a similar starting point for each tester. However, there was heterogeneity in the group. There were five persons who were born blind or went blind early in childhood, two persons who went blind in later childhood or younger adulthood and two persons who went blind late in life. It was obvious that the latter two persons were not familiar with text to speech technology and electronic support tools and dealt differently with the device than those who went blind early in life. The test group encompassed six men and four women. The candidates were briefed repeatedly beforehand in order to inform them about all relevant organisational issues including their way to and from the testing premises.

The analysis of the interrogation will be going on in 2010 and the final interpretation will be available in the next deliverable D3.5 in 2010. But it can be stated already that speaking devices seem to be highly desired by the audience even when not disabled.

6. Tests with a Demonstrator of Enhanced Audio Description

Partners involved: TVC, UAB

6.1 Introduction:

Audio Description (AD) is an additional audio track with narration for blind and visually impaired people. This service can be delivered using different techniques: over DVB-T with the help of a second pair of audio channels (broadcast/broadcast) or with the help of a shared distribution, broadcast and broadband via the air and the web (called a hybrid solution), even a fully web based solution can be considered called WebTV.

TV Catalonia has established an almost regular service containing AD with the help of DVB-T transmitters in the local area around Barcelona. People suffering vision impairments can switch to an additional narrative sound channel explaining what is going on. TVC has established a feedback service with users both at association level and with individuals who write regularly offering their opinions of the service. Tests with users have been undertaken by TVC and UAB as part of the work of the project on "mature services" and the results of this regular service will be available in D2.4.

6.2 Description of the implemented technique:

Distribution of AD via the web is not yet offered as a regular service. Because the AD audio track can be delivered using technologies that are not currently tested for this purpose (e.g. the synchronisation issues in broadcast/broadband distribution), it is regarded as an emerging access service. It is expected that the results of the user interviews which have been undertaken by TVC and UAB and reported in D2.4 concerning AD are also true and valid for WebTV and Hybrid-TV AD. The experience of the viewers will be the same, as the presentation of AD is completely independent of the way it is delivered. But delivery of the AD channel to the receiving system can create accessibility problems in the service that are different in each delivery and presentation mode.

Studies and tests must be done for the following cases:

a) Audio Description over a DVB-IP TV channel (AD-IPTV).

b) Audio Description for video on demand (AD over VoD)

c) Audio Description for web page videos (AD over the web)

These alternative forms of delivery of Audio Description services can increase the possibilities of providing AD services to users in different situations, depending on the networks and access terminals used by the visually impaired. These three examples have alternatives, but other scenarios are possible, such as, portable devices to enhance the usability of Audio Description.

6.3 Audio Description over a DVB-IP TV channel (AD-IPTV)

This refers to the redistribution of an original Digital Terrestrial Television (DTT) signal over an IP network.

In our demonstration the DVB–ASI (standard Digital Video Broadcast format Asynchronous Serial Interface) signal, extracted from the DTT (Digital Terrestrial Television) multiplexer, is sent to a computer via a DVB card, executing a program capable of separating the different services carried by the digital TV multiplex. A new transport stream with the service information and the added services associated with the DVB-IP video is then generated. One of these services is Audio Description.

This transport stream enters an IP network via an IT gateway. The DVB-IP service can be captured and decoded by:

a) An **IP-TV set-top box** connected to a TV set. In this case operational barriers in IP-set-top boxes with remote controls different from the TV's can hinder accessibility for the visually impaired. These operational difficulties are probably similar to those found in the TV remote control device. AD accessibility must be tested with the aim of making it as easy as possible and identifying potential barriers and ways for improvement.

b) A **PC computer** with access to a TCP-IP network and with Digital Media player software (e.g., VLC) makes it possible to access a TV stream (even previously **automatically recorded programs** stored on the computer's hard disc). In this case, access to the AD tracks is the main aspect to check, as well as the TV programs' reception and reproduction. So, the operation of the computer must be tested and, if possible, changes should attempt to make accessibility easier. To ensure the computer's audio reproduction quality, external loudspeakers or headphones should be used.

User tests:

Access problems will be diagnosed through tests carried out among a small group of visually-impaired users. Possible solutions and alternatives will be discussed by real demonstrators operating in an Intranet network.

6.4 Audio Description for video on demand (AD over VoD)

Here we have an IP network carrying the offer of videos on demand (VoD). Users can choose an item from an initial web page with searching capability. The programs contain optional secondary audio tracks, including Audio Description.

In this case a VoD server stores the TV programs as files in transport stream format (*.ts). The IP gateway used in the previous IP-TV case provides the IP-TV live signal to be stored. But before storage, the MPEG2 DTT signal--with the audio signal in MPEG1 format layer 2--is transcoded in order to decrease the bit rate for storage occupation as in network delivery to MPEG4 video; H264 (level 5.1, high profile, at 1500 kb/s.), with audio also transcoded to Advanced Audio Coding (ACC) (stereo at 128 kb/s).

A Real-Time Streaming Protocol (RTSP) server receives the play commands for the video stream files (with associated services such as AD). This server sends unicast streams to the IP network. There is also a Web server and a data base to present the contents. Users are given search options on an html page compatible with their IP set-top box interface and the TV set. In the future when the installation will come closer to normal exploitation, P2P (Peer to Peer) techniques will be used.

User tests:

In this TV distribution mode, once the flux of the program has been established, the user's experience will be the same as in normal DTT broadcasting. So, the testing done for the AD service as a mature technology service is valid. The difficulties posed by operating the IP set-top box and the TV set remote control devices will make up the main part of the testing to be done among technicians and visually-impaired users.

If the alternative of receiving Audio Description on TV is through a PC equipped with media player software and sound transducing equipment, the scope of the tests will cover the problem of access to content, as for the AD service on TV.

6.5 Audio Description for web page videos (AD over the web)

In this case, the reception and reproduction systems are computers and the programs are accessed through web pages with video links, similar to 'YouTube' or 'Google Video', etc. The links on the presentation and search pages connect to video clips that are reproduced by means of a video reproduction player (Flash, Quick Media, Windows media, etc.). A window opens displaying the video player, which in some cases can be enlarged to full screen. Some services have secondary options, such as multilingual subtitles or additional audio tracks.

For broadcasters, this case is similar to video on demand, but there are differences because access is being made through computers.

Our demonstrator comprises a reproduction service of programs broadcast in the last week on several TV channels, in addition to complementary videos on topics relating to the TV channels' content, but not broadcast as "synchronized content". These complementary videos come from the TV's video archives. The system of video recording comprises the capture of the video streams corresponding to a TV channel.

The start and end of each clip are produced by signals coming from the continuity studio, as the description and titles.

In all the cases, when the original program broadcast has secondary audio tracks (as happens with subtitles in one or more languages) these additional services will be included in the web presentation as options offered by the player, as happens with Audio Description.

Once the equivalence in intelligibility of the AD audio channel in the sound reproduction system of the computer to that of a digital television has been checked, the problems of accessibility can be addressed, also in this case the related problems with the operation of the computer program and web pages through which the video items and their associated services are chosen.

The tests will not be exhaustive because the number of variants of web pages for access to video programmes and the different types of web video players present a range of different ways of operation to the user.

User tests:

In this case, the accessibility problems are around the web page accessibility and the computer operation.

Once the demonstration is set up in a test room, it will be tried out by technicians and then by a small number of expert visually-impaired users (3 to 6 people). Their comments with regard to operability, access to functionalities, etc. will be reported.

In a second phase, a small number of visually impaired and blind people (~ 3 to 6 people), that can be considered expert users and who have assessed since their start-up the accessibility services of TVC, will answer a questionnaire and their answers will be gathered in a systematic way.

The user tests will start in 2010 and the analysis of the interrogation and the final interpretation will be available in the next deliverable D3.5 in 2010.

7. Tests with a Demonstrator of an Enhanced Text Service

Partners involved: IRT, RBB

7.1 Introduction

The background to this demonstrator are the possibilities for better access to digital TV services thanks to hybrid (DVB-T/IP) receivers with broadband connections, large screen diameters and the high resolution displays of high definition television (HDTV). As stated in deliverables D3.1 and D3.2, the introduction of HDTV will lead to replacing traditional teletext technology with more recent flexible technologies for text based services. The aim for DTV4All workpackage 3 in this area as described in D3.2 is to set up a digital service demonstration of a second generation digital TV-text service that can be decoded and represented by HDTV receivers supporting HbbTV which means Hybrid Broadcast Broadband TV. Delivery of the content is to be based on IP and/or High Frequency (HF)-delivery and provided with the help of an MPEG2 Transport Stream containing additional data of relevance for better access. In presenting an HbbTV solution, the demonstrator that was actually implemented and tested is focusing on a major standard emerging right now.

7.2 Approach

At IFA 2009, ARD Text (the Teletext editorial department for the nationwide Channel 1 of ARD hosted by RBB) presented a novel HbbTV based text service based on the content of its Channel 1 Teletext service. Among other similar ARD demonstrations this was actually the first public demonstration of an HbbTV service. It was developed and implemented jointly by IRT and ARD Text. It was decided to use this new service as a basis for demonstrating and testing a barrier-free novel text service in the DTV4All project. The idea is to tackle general access issues of an HbbTV service based on CE-HTML displaying mixed text, graphics and pictures. The test focuses on sight impaired users. These are to be provided with a means to adapt the service to their personal needs and preferences for better legibility and understanding.

7.2.1 Editorial Decisions for a barrier-free Look and Feel

In a number of sessions with the ARD Text editorial team from April 2009 onwards and in consultation with the DTV4All project team at IRT, the features for better access to be included and tested for the enhanced ARD Text Service were decided upon. As the HbbTV-text had not been designed in a barrier-free manner from scratch, these features had of course to be in line

with the general navigation concept of the existing service as demonstrated at IFA. As a first step, access barriers for sight impaired people were identified, then a solution suggested.

It was clear that the font size was too small and that users should be provided with means to enlarge the font. The following solution was decided upon: The current concept of ARD Text has a three section division. Users move up and down in the menu and from news item to use an item by means of the arrow keys on their remote control. Each area currently activated by a user in this way is framed with a white rim. The idea was to enlarge (like in a zoom) each white rimmed active area. Enlarging the font like that means, however, that the activated area will cover neighboured text regions. The enlarged area naturally moves with the users focus / activated area. Among the requirements for implementation were that the largest font size possible was to be chosen for the enlargement and that a solution had to be found for the problem that enlarged text sites of the individual news items would not fit on the screen any more if enlarged in this way. An example of the presentation is shown in Fig. 3.
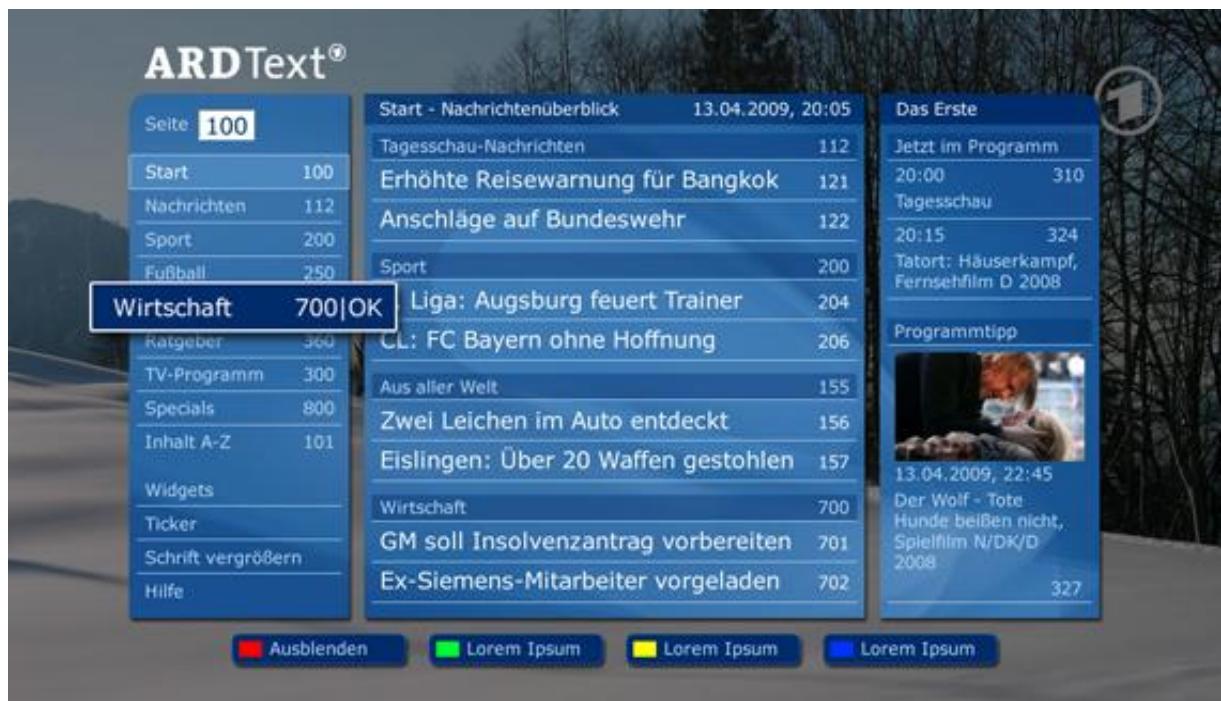

Fig 3: Focus on the navigation with enlarged font

Another example with enlarged text in areas of interest (here: the news) for the sight impaired is depicted in Fig. 4.

Fig 4: Focus on the news headings with enlarged font

For those people whose sight impairment was so heavy that an ***enlargement of the font would not be sufficient*** it was decided to try out a (voiced) text to speech version of the menu and the news items.

Another problem was ***relatively weak contrasts*** in the existing ARD Text version as well as the partial use of ***colours not suitable*** for people with sight impairment. Therefore it was decided to provide additional colour sets for more contrast and for suitable colours doing justice to the most prominent sight impairments. Research assisted by the respective regional associations led to the following conclusions:

- Generally, information should not be communicated through colours but through content or outlines. The background should clear and uniform.

- An optimum contrast is created when text and background are distinguished clearly by brightness and colour. Contrast between foreground and background should have at least a relation of 4.5:1 (test with „Color Contrast Analyzer")[1]. Maximum contrast but no complementary colours as these could lead to flickering.

- Red and green must be avoided.

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[1] http://www.wob11.de/vorpruefungstest-nach-wcag20seite4.html

- Black writing on a white background offers optimum contrast (high difference in light density). Black on yellow and blue on white or yellow are also good. In turn, negative patterns like white on blue or black are good.[2] Red should only be used as a dark component (white on red, yellow on red)[3]

RBB relied on a table generated by a German research project on optimisation of contrast which is shown in the appendices in section 10.5. In consultation with the associations of the disabled it was decided to offer special options assisted by this table. The goal was to find out how the contrast was best for 231 sight impaired users (selection criteria: high physical contrast as well as strong preference by the users).

Finally, the ***navigation path to the named features for improved access*** had to be defined. In the future in the menu a point will be found labelled: „Barrierfree". If this point is activated, a site will offer the different options that can then be chosen by the user.

7.2.2 Technological Solution and Implementation

The next generation ARD Teletext service is designed for HDTV sets and STBs which implement the new HbbTV specification. HbbTV has been submitted to ETSI for publication as TS 102 796, the current draft specification can be downloaded from http://www.hbbtv.org. HbbTV is "Hybrid Broadcast Broadband TV" which means that broadcast services are enhanced and extended with services over the Internet. In the terminology of HbbTV, applications are signalled with broadcast services and are made available to the user while they watching a service. However, HbbTV applications can be delivered also via broadcast, especially if they are intended to be alternatives for the classical standard teletext. The new ARD Text is available from both delivery channels. HbbTV devices that have not been connected to the Internet can still launch it except that there will be no A/V content.

HbbTV terminals provide the following functionalities:

- HTML browser including Cascading Style Sheets (CSS), ECMAScript, Document Object Model (DOM)

- Streaming and download of audio-visual content via the Internet

- Delivery via broadcast and Internet

- Signalling of an application as a Teletext replacement service

- Stream events via broadcast for synchronizing applications with the broadcast service

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[2] DBSV_Klartext.pdf

[3] ea_handbuch_fuer_planer_und_praktiker.pdf

- Personal Video Recorder (PVR) and tuning API

For DTV4All the ARD text should be extended by 3 features to support people with disabilities:

1. Increased font size

2. Alternative colour sets

3. Read out of Teletext pages

HTML with CSS and ECMAScript is ideally suited to realize the first two features "Increased font size" and "alternative colour sets" simply by providing multiple CSS styles, one for each colour set and font size.

The third feature uses audio streaming and can only be used when the device is connected to the Internet. Audio and Video content is delivered over the Internet with the HTTP protocol and the audio coding can be either MPEG-1 layer 3 or MPEG-4 AAC. The audio streams are started whenever a new Teletext page is loaded, with a short delay of 500ms in case the user "zaps" through the content. If the user selects another page before the audio stream has finished it is stopped and the new stream is started.

The encoding parameters for DTV4All are: MPEG-1 Layer 3, mono, sampling rate 16 kHz, 48-64kbit/s.

7.3 Test Set-Up and Methodology

The tests were carried out at RBB on 14th and 15th of December 2009 with 10 sight impaired test persons. Individual test sessions were held on 14th (RBB premises Potsdam), 15th (RBB premises Berlin) and 16th December 2009. The two different locations were chosen because some of the testers are from Berlin, others from Potsdam or the countryside around Potsdam. Each individual test session took about 1 to 1.5 hours.

The general objective of the laboratory test was to find out which features a next generation text service should offer in order to be barrier-free for sight impaired users.

7.3.1 Recruiting the users

The tests were conducted by RBB with the help of 10 sight impaired users. Again, the users were recruited with the assistance of the Associations of the Blind both in Berlin and Brandenburg. Being led by the wish to establish a user group that is representative for sight impaired users, recruiting the users was guided by the following considerations and requirements:

According to the World Health Organisation (WHO) and also to German legislation somebody is visually impaired if the vision in the better eye with best possible glasses correction is less than or equal to 30 percent of normal vision. (Level 1) Level 2 is according to WHO is defined by a vision of less than or equal to 10% on the better eye, and Level 3 by less than or equal to 5 percent on the better eye. While the WHO defines level 3 as blindness, German legislation calls level three "high-grade sight impairment". The test will consider people with sight impairments at each of the three levels.

In addition to these levels of sight impairment there a number of eye diseases which result in specific constraints on vision or sight impairment and which also need to be considered. A list of these was created and confirmed by the impairment associations to be complete as to include the most prominent disabilities:

- *Inability to see/distinguish red and green* (Red-Green Blindness/Partial Colour Blindness)

- *Inability to see colour, combined with limited vision* (total Colour Blindness/ Achromatopsia)

- *Limited contrast sensitivity combined with low vision* (age-related <u>Macular Degeneration</u>)

- *Visual field loss combined with low vision* (diseases of the visual nerve, Stroke, Glaucoma and Diabetic Retinopathia).

- *Blurred vision combined with low vision* (Cataract).

- *Night blindness, problems with adjustment between bright and dark* (<u>Retinitis Pigmentosa</u>)

- *Low vision and sensitivity to light* (Albinism)

RBB thought was that the group should be representative of *the impairments/sight limitations* listed above rather than of the different diseases as the origin of these sight limitations. Moving from there it was decided to try and find testers representing the following:

- Inability to see/distinguish red and green

- Inability to see colour, combined with limited vision

- limited contrast sensitivity

- visual impairment level 1 (WHO)

- visual impairment level 2 (WHO)

- visual impairment level 3 (WHO)

- blurred vision

7.3.2 Methodology of Information Gathering in the Individual User Test Session

As stated above, the general objective of the laboratory test was to find out which features a next generation text service should offer in order to be barrier-free for sight impaired users. This general objective was to be reached by offering our demonstration as one sample to go by. Consequently the methodological idea was to test the usability of this specific demonstration for sight impaired people in order to deduce general results and finally recommendations for barrier-free next generation text services. Or to be more precise: The users were to evaluate and judge the features employed in the demonstration for reaching better access like font enlargement, contrast variations and voiced text in order to reach conclusions of a more general nature.

To gather the information needed both a direct and an indirect method was chosen.

Indirect: One important part of each individual user session was fulfilling various tasks concerning the features added for better access. The meaning and objective of each task was clearly defined. Concerning each "barrier-free feature" it was checked first whether the respective navigation for reaching the feature was user friendly and second if the solution as such was satisfying for the user by trying out the feature. The users' success or failure in performing a task thus provided evidence if the exemplary approach of the barrier-free features was convenient, user friendly, and most important useful for reaching satisfying access to the service. In addition, free spontaneous comments of the users were to show which features and functionalities they like or dislike. Fulfilling the tasks and the problems being encountered was measured by the usability team.

Direct: Similarly to the usability test of the Ammec earlier in 2009, the users were asked questions to find out about wanted qualities and functionalities after the fulfilling of the tasks was finished. After each task, the users were asked directly to judge that task, whether they found it difficult and if they found the feature tested useful. There were both open questions (like, dislike most) followed by specific questions offering a multiple choice, covering each major aspect of better access to enhanced text services.

7.3.3 Room Set Up for Individual Testing Sessions

The tests took place in a room which is normally used as an office. The room was equipped as follows:

- Table with FullHD TV set SONY KDL-32W5500 and prototype set top box Humax iCord HD+.

- Internet access for return channel functionalities

- DVB-S satellite reception facilities providing barrier free HbbTV test application.

7.3.4 Description of the Individual User Test Session

The users were welcomed and introductions made. They were offered refreshments and a short summary of the test context was given: The project DTV4All and its aims were explained, the corresponding new technology – HbbTV and new text services were sketched, tailored to the respective level of knowledge of each of the users. It was explained to the users, in simple terms, what the test would look like and that we needed their expertise in order to get valuable feedback not only for the given service but also for such future offers in general. (10 min) The testers were encouraged to say whatever they think, that it would help if they said aloud what they think, the more, the better. They were also encouraged to say what they do not like because that would also be very helpful (10 min).

The user was then asked some pre-task questions about computer and TV usage and ownership. This was simply to find out about media and computer literacy as well as the current use of teletext (5 min).

The users were then asked to take in a position in front of the TV that they would normally take (distance from the screen at home) and to use the aids they usually use as well as to adjust the light as they need it. Then they were asked to fulfil the tasks one by one. The interviewer guided the tester through the tasks, giving help only if necessary. Each task was explained in advance and the users were asked if they had understood the task. One second interviewer(s) observed the tester, noting down any comments and questions made but not question the tester directly about each task completed. The third interviewer only noted "success" or "failure" of each task (30-40 min).

Finally, an interview was conducted that combined questions evaluating the experience with questions on the wished for features for tests (20 min).

8.   Reduced playback speed

Partners involved: All (RAI if requested by Brunel)

8.1 Background

Dyslexics and some people with cognitive impairments could benefit from receivers that allow the playing speed of the video/audio content of a program to be reduced. It is expected that the comprehension for highbrow content like scientific contributions etc. will become improved and conversations will become easier to understand. This is particularly true if pitch compensation is applied which is of high importance for understandability and acceptance.

DTV receivers or Set-top Boxes with the capability of reducing the speed of broadcast content in real time are not yet in the market. The situation is different for stored content on DVD: Many DVD players offer this possibility. The handicap of all these players is the inability to do pitch compensation. This means, the pitch of the audio will be decreased when a reduced playback speed is applied. The intended purpose on DVD players is navigation and not to increase the understandability of the content. These DVD players are not applicable and cannot be used for the intention for this project.

There are some PC based solutions already in the market able to do slow down with pitch compensation. These PC's are making use of the increase in the capacity of the storage media, the hard disk. Two methods of reducing playback speed are considered: uniform slowdown and adaptive speed depending on the content/scene. The first one will extend the overall time while the second one will avoid that. As stated in deliverable D3.2 only one method will be chosen by the DTV4All project for a prototype demonstrator.

The project will focus on uniform slowdown with pitch compensation but without time correction. This means, the overall time of the footage will be increased by the same factor as the slow down applied. The reason for this choice is the availability of the first method. It is also expected that the quality in comprehension of the first method will be much higher than the second method. It is also expected that the likelihood of any future implementations in DTV receivers or Set-top Boxes is much higher for the first method. This is because of a much lower complexity compared to the second method applying time correction. Furthermore, the first method has a chance to become real time applicable, the second not (The second method requires the storage of the content first before it can be processed).

8.2 Set up of a digital mock-up of a test environment for uniform slowdown by IRT:

In the first instance, IRT will determine the appropriate speed of slowing down using free software with the help of German user groups. It is expected that the rate of deceleration will not become less than 50% compared to the origin speed without reducing the comprehensibility considerably.

There are players in the World Wide Web able to do slow down with pitch compensation. All of them are PC based using the PC's hard disk. The players are applicable for stored content only and cannot be used for streaming content as a TV program usually is. This deficit will be compensated by the capability of doing the pitch compensation. As a consequence of the uniform slowdown the viewing time is prolonged proportionally. The benefit for people with cognitive impairments could be better understandability and comprehensibility of content. Appropriate content in German language will be provided by RBB. Some PC based software solutions for reduced playback speed will be tested by IRT and applied to RBB's footage. As a result of this process, a DVD will be available which can be used for laboratory tests at the facilities of the RBB. The result of the initial tests will be given to Brunel for further enhanced tests. (A possible questionnaire is attached in the annex to this document. The final questionnaire may look different).

UAB will arrange expert tests in the Catalan and/or Spanish languages. Technical support will be provided by TVC and/or IRT.

8.3 Set up of a digital mock-up of a test environment for uniform slowdown by Brunel:

Brunel will generate higher quality audio/video material with a sound stretch based on its own implementation, using speed reduction information obtained from the initial tests in Germany. Red Bee will provide appropriate material in the English language. Brunel will implement, demonstrate and test solutions for slow playback and a time stretching mechanism in the English language and the Italian language if requested.

9. Implications for Work in the Next Period

9.1 Implications for the tests of Video Signing:

A test rig based on the "SAVANT" demonstrator was set up at RAI with the help of Brunel and is ready for use. In spring 2010 RAI intends to do user tests. Results are expected to be available at the beginning of 2010 and results will be reported in deliverable D3.5. Another test rig based on "HbbTV" will be set up by IRT and will be available in 2010. Tests will be carried out with the help of RBB.

9.2 Implications for the test for Clean Audio:

The Demonstrator was set up by IRT and is ready to use. The results of the pre-tests are available in this document. They were used as input for the final test which is currently taking place (November/December 2009) by RBB and IRT. Results of the main test will be reported in deliverable D3.5

9.3 Implications for the tests with User Interfaces for Text to Speech:

Tests were carried out intensively in 2009 by RBB. Examination and interpretation take time and are expected to be available in the spring of 2010. Final results will be reported in deliverable D3.5

9.4 Implications for the tests with Enhanced Audio Description:

Tests will be carried out by UAB in 2010 assisted by TVC. Final results will be reported in deliverable D3.5

9.5 Implications for the tests with Enhanced Text Services:

Tests were carried out this month (December 2009) by RBB with a demonstrator developed by IRT. The results will now be a) collected and documented and b) interpreted. Final results will be reported in deliverable D3.5.

9.6 Implications for the tests of Reduced Playback Speed:

Test material will be provided by RBB, Red Bee, TVC and RAI in early 2010 in different languages. The material will be processed by IRT after the test material is available and DVD's will be distributed to the partners for first tests. The experiences gained from these tests will be used by Brunel to set up a second version of the demonstrator which will be tested with RAI in the middle of 2010. Results are expected to be available in autumn 2010. Final results will be reported in deliverable D3.5.

10. Appendices (Questionnaires and working tables)

10.1 Questionnaire concerning the Video Signer:

Parte Scritta	Video
Il progetto DTV4All ti ringrazia per Il tempo e l'attenzione che stai dedicando a questo questionario. *Perché del questionario:* Il questionario serve per comprendere meglio le esigenze dei sordi in materia di comunicazione. Mediante l'analisi delle risposte si potrà valutare la reazione degli utenti in merito ad un servizio di Accesso Emergente per il linguaggio dei segni. Il servizio tradizionale di interpretazione in L.I.S (Lingua dei Segni Italiana) è legato ad alcune edizioni del telegiornale o di programmi dedicati. Lo schermo viene, in pratica, diviso in due per ospita contemporaneamente il conduttore e l'interprete. Queste edizioni risultano poco fruibili dal pubblico udente perché la finestra con l'interprete occupa una porzione significativa del video. Ne consegue una difficoltà oggettiva di inserire il servizio di interpretazione nelle fasce principali del palinsesto. l servizio che si intende valutare permette all'utente di attivare o disattivare l'interprete. La flessibilità dei canali digitali permette anche di definire la posizione e la dimensione della finestra in cui viene visualizzata la traduzione in	

| LIS.

Le tue risposte serviranno ad orientare le scelte per la realizzazione e l'erogazione del servizio. | |

LIS.

Ruolo e valore dell'interprete

Parte Scritta	**Parte Video**
Quando guardi il telegiornale in televisione, ti è utile vedere sullo schermo l'interprete che traduce le notizie in LIS - Lingua dei Segni Italiana? E' molto utile E' abbastanza utile E' poco importante E' inutile	Sample related to the question
Quali sono i programmi televisivi che preferisci e segui con maggiore frequenza? Telegiornali Film Dibattiti (come "Porta a porta") Documentari Spettacoli (come "Carramba che sorpresa!") Programmi sportivi Cartoni animati	

Personalizzazione dell'interprete

Parte Scritta	**Parte Video**
Quando guardi la televisione, ti piacerebbe poter spostare liberamente sullo schermo l'immagine dell'interprete LIS? Sarebbe molto utile Sarebbe abbastanza utile Sarebbe poco importante Sarebbe inutile	Sample related to the question
Quale soluzione preferisci riguardo alla posizione della finestra con l'interprete ? Rispondi dopo aver guardato gli esempi. In basso a destra In basso a sinistra In altro a destra In alto a sinistra	Sample related to the question showing the interpreter window positioned in each corner
Quando guardi la televisione, ti piacerebbe poter liberamente scegliere la dimensione sullo schermo della finestra con l'interprete ? Sarebbe molto utile Sarebbe abbastanza utile Sarebbe poco importante Sarebbe inutile	Sample related to the question
Utilizza la tastiera per impostare la dimensione preferita della finestra in base allo schermo numero uno (dimensione 14") Un sedicesimo di schermo Un ottavo di schermo Un quarto di schermo	The user can change the window size according to their preference of viewing

Utilizza la tastiera per impostare la dimensione preferita della finestra in base allo schermo numero due (dimensione 28") Un sedicesimo di schermo Un ottavo di schermo Un quarto di schermo	The user can change the window size according to their preference of viewing
Utilizza la tastiera per impostare la dimensione preferita della finestra in base allo schermo numero tre (dimensione 42") Un sedicesimo di schermo Un ottavo di schermo Un quarto di schermo	The user can change the window size according to their preference of viewing

Visualizzazione della traduzione su dispositivo palmare

Parte Scritta	**Parte Video**
Quando guardi un programma televisivo, ti piacerebbe avere la traduzione in LIS visualizzata sul tuo telefono cellulare o su un visualizzatore portatile? Preferisco vederla sul televisore Vorrei vederla sul cellulare o su un dispositivo portatile Vorrei entrambe le soluzioni	The user can see the translation into sign language both on the TV screen and on a smart phone.
Quando guardi un film al cinema, ti piacerebbe avere la traduzione in LIS del film visualizzata sul tuo telefono cellulare o su un visualizzatore portatile? Sarebbe molto utile Sarebbe abbastanza utile Sarebbe una funzione poco importante Sarebbe inutile	The user can see the translation into sign language on a smart phone.
Confrontando questo metodo con quello tradizionale, ritieni sia più faticoso vedere la traduzione sullo schermo del palmare piuttosto che sul televisore ? E' molto più faticoso E' leggermente più faticoso Non riscontro differenze E' meno faticoso	The user can see the translation into sign language both on the TV screen and on a smart phone.

Visualizzazione della traduzione su dispositivo palmare

Informazioni personali

Parte Scritta	Parte Video
Età	

Sesso:
    Femmina
    Maschio	

Scolarità:
    Elementari
    Medie
    Maturità
    Laurea	

Tu sei sordo:
    dalla nascita
    da prima dei 3 anni
    da dopo i 3 anni	

Qual è il tuo deficit uditivo?:
    Sordo profondo
    Sordastro	

Provieni da una famiglia in cui sono sordi:
    Entrambi i genitori
    Un genitore
    Nessuno dei due genitori	

Saluto: Grazie per aver dedicato il tuo prezioso tempo alla compilazione di questo questionario. Ti rivolgiamo un cordiale saluto.	

10.2 Questionnaires concerning Clean Audio:

Introduction:

The compilation of the DVD was done by *Institut für Rundfunktechnik*, a project partner in DTV4All (Digital Television for all). There are certain techniques to be tried to diminish the level of music and background noise, which helps hard-of-hearing people to understand the speech of TV programmes. We just call it " CLEAN audio". You will have the option to select this extra audio-track instead of the normal audio track. The following pre-test shall provide initial information on how far you have to go in noise cancellation to make the speech legible to hard-of-hearing users, which maybe can affect the sound quality of the speech they hear.

There are 6 **ITEMS** on the DVD each of them no longer than 2 minutes duration. You can select them using the control buttons or the number buttons [1] through [6] on the remote control of your DVD-set.

Test Instructions

Please watch the **ITEMS** and focus on the intelligibility of the dialogue.

When one **ITEM** has finished please answer the corresponding **QUESTIONS**. Please give your **ANSWERS** just below the questions. The number of the playing **ITEM** is displayed on the left hand side below the TV-picture (e.g. **ITEM 1**).

Please now try to enjoy the test procedure!

The Test

ITEM 1	To be selected using the arrow keys on the remote control.

At first you will hear the soundtrack as it normally is for the tv-programme. In the following we call that NORMAL audio.

QUESTION: Did you understand the speech?

ANSWER:

ITEM 2	Playing automatically after **ITEM 1** or select it by the arrow keys on your remote control.

This is similar to **ITEM 1**, but audio is toggled between NORMAL audio and CLEAN audio, symbolized by the white mark "walking" on an orange coloured pattern. For normal audio the orange pattern is wide, for clean audio it is thin. On the right hand side the words "NORMAL" or "CLEAN AUDIO" will appear.

QUESTION: Did the intelligibility improve using "CLEAN AUDIO" mode?

ANSWER:

ITEM 3	Playing automatically after ITEM 2 or select it using the arrow keys on your remote control.

Now you can hear the <u>whole</u> item in CLEAN AUDIO mode.

QUESTION: Did your understanding of the speech improve compared to **item 1**?

ANSWER:

ITEM 4	Playing automatically after ITEM 3 or select it using the arrow keys on your remote control.

The next test involves comparing four different audio conditions for an excerpt of about 30 seconds duration. The excerpts are tagged **A, B, C,** and **D**. Part **A** has loud background noise, for **B, C,** and **D** the background noise successively decreases, again indicated by the orange pattern below the picture. Probably there are only small differences probably you find that the previous version (e.g. **B** when **C** is playing) was better. Please feel free to vote

QUESTION: Did you understand the dialogue? Please rate the 4 excepts (i.e. 1 = 'easy to understand,'....., 6 = 'unintelligible'). For instance, 6-4-4-2 means, that **A** was not understood, **B** and **C** a little bit (equally), and **D** was understood.

Another example is 6-5-2-3. This means nothing is intelligible in **A,** nearly nothing in **B**, **C** was good, and **C** was better than **D**.

ANSWER:

QUESTION: Did one or more examples sound pleasant or unpleasant?

ANSWER:

ITEM 5	Playing automatically after **ITEM 4** or select using by the arrow keys on your remote control.

This is the same type of trial as **ITEM 4**. Please votes for **A, B, C** and **D**.

QUESTION: Again, please rate the 4 excepts (i.e. 1 = 'easy to understand', ,....., 6 = 'unintelligible')

ANSWER:

QUESTION: Did one or more examples sound pleasant or unpleasant?

ANSWER:

ITEM 6	Playing automatically after ITEM 5 or select it using the arrow keys on your remote control.

A sample of about 60 seconds playing time is shown twice. Both versions are CLEAN AUDIO. But in the first version the music or ambient noise is louder when nobody is talking. The second version is near silent during the pauses when nobody is speaking. A short caption is shown to announce which version is presented.

QUESTION: Which version do you understand better?

ANSWER:

QUESTION: Which version is more pleasant to hear?

ANSWER:

Please tell us your grade of hardness of hearing:

Grade of hardness of hearing	Percentage loss of hearing	X
Low	20-40%	
Medium	40-60%	
Severe	60-80%	
residual hearing	80-95%	
Type of your hearing aid:		

Prueba de Clean Audio del proyecto europeo "DTV4All"

Introducción

El material audiovisual del DVD ha sido creado por el Instituto de Tecnología de Comunicaciones de Munich (*Institut für Rundfunktechnik)*, y es un partner en el proyecto europeo DTV4All (Digital Television para Todos).

Para reducir el nivel de música y de sonido de fondo existen diferentes técnicas. Esto se hace para ayudar a las personas con problemas de audición y permite mejorar la recepción de las locuciones en los programas de TV. El nombre que se le da a ésta tecnología es de "CLEAN audio".

En esta prueba se evaluará una pista con CLEAN audio en lugar de audio normal. Los siguientes tests primero darán la información de hasta cuanto sonido se puede cancelar, lo que es posible que afecte a la señal de habla.

En el DVD hay 6 **ITEMS,** y la duración de cada uno no sobrepasa los 2 minutos. Se puede seleccionar utilizando los botones de control numérico del [1] al [6] en el control remoto de la DVD-TV.

Instrucciones

Por favour mire los 6 **ITEMS** y preste especial atención a los dialogos y su comprensión.

Cuando ha terminado un **ITEM** responda a las **PREGUNTAS** correspondientes que encontrará bás abajo. Ponga las **RESPUESTAS** en la parte inferior. El número del **ITEM** que está viendo se puede ver en la parte de abajo a la izquierda, como por ejemplo **ITEM 1**.

Gracias por su ayuda!

ITEM 1	Seleccionarlo utilizando el botón con la flecha del mando.

En esta primera prueba oirás la pista de sonido como se oye normalmente en la TV, es de audio NORMAL.

PREGUNTA: Has entendido lo que hablan, la conversación?

RESPUESTA:

ITEM 2	Se pone automáticamente después de **ITEM 1** o se puede seleccionar pulsando el botón con una flecha del mando

Esta prueba es la misma que la primera **ITEM 1**, y contiene audio NORNAL y además se le ha intercalado un audio CLEAN. Se puede ver qué parte es NORMAL o CLEAN por un termometro naranja situado en la parte inferior. Cuando el audio es CLEAN la línea naranja se hace más fina. También va acompañado de las palabras "NORMAL" o "CLEAN AUDIO" que aparecen escritas en la pantalla.

PREGUNTA: Cuando aparece el letrero que dice "CLEAN AUDIO" mejora la recepción?

RESPUESTA:

ITEM 3	Se pone automáticamente después de **ITEM 2** o se puede seleccionar pulsando el botón con una flecha del mando

En este ejemplo todo está en CLEAN AUDIO

PREGUNTA: Comparado con **ITEM 1** **¿Se entiende mejor?**

RESPUESTA:

ITEM 4	Se pone automáticamente después de **ITEM 3** o se puede seleccionar pulsando el botón con una flecha del mando

El ejemplo siguiente es una comparación de cuatro audios diferentes, cada uno dura unos 30 segundos. Se etiquetan con **A, B, C,** y **D**. Una parte de **A** tiene el sonido de fondo o ambiental muy alto, para **B, C,** y **D** el sonido disminuye, y todo está representado otra vez por el termómetro con la línea naranja más fina. Probablemente las diferencias son muy pequeñas – y seguramente creerás que por comparación la versión anterior (ejemplo **B** cuando se pone **C**) se oye mejor. Por favor dales un voto.

PREGUNTA: ¿Pudiste entender el diálogo? Por favor califica cuatro veces (ejemplo: 1='excelente'.....6='insuficiente'). Por ejemplo: 6-4-4-2 significa que **A** no se entendía, **B** y **C** un poco (igualmente), y **D** era bueno.

Otro ejemplo es 6-5-2-3. Significa que en **A** era ininteligible**,** casi nada en **B**, y **C** era bueno, y **C** era mejor que **D**.

RESPUESTA:

PREGUNTA: Alguno de los ejemplos no era agradable o era desagradable al escucharlo?

RESPUESTA:

ITEM 5	Se reproduce automáticamente después de **ITEM 4** o seleccionarlo por las teclas de las flechas en el mando.

Aquí tenemos el mismo tipo de prueba que en **ITEM 4**. Por favor califica **A, B, C y D**.

PREGUNTA: Una vez más responda cuatro veces (e.g. 1='mejor'..... 6='peor')

RESPUESTA:

PREGUNTA: Alguno de los ejemplos era mejor – o peor?

RESPUESTA:

ITEM 6	Se reproduce automáticamente después de **ITEM 5** o seleccionarlo por las teclas de las flechas en el mando.

Ahora veremos un ejemplo de 1 minuto, y se ve dos veces. Las dos versiones son de CLEAN AUDIO. En la primera versión cuando no hay nadie hablando la música o el ambiente están más altos. En la segunda versión está casi todo silenciado, incluso en las pausas cuando no hablan. Todo esto está indicado en la pantalla cuando aparece.

PREGUNTA: Qué versión entiendes mejor?

RESPUESTA:

PREGUNTA: Cuál es más agradable de oír?

RESPUESTA:

Por favor especifica el grado de pérdida auditiva:

Grado de discapacidad	Porcentaje	X
Bajo	20-40%	
Medio	40-60%	
Alto	60-80%	
Restos de oido	80-95%	
Tipo de audifono:		

PREGUNTA: Cuál es más agradable de oír?

Vortest: Bereinigte Tonspur im Projekt DTV4all

Allgemeiner Hintergrund

Die beiliegende DVD wurde im Projekt DTV4all von unserem Projektpartner Institut für Rundfunktechnik erstellt. Das Institut für Rundfunktechnik entwickelt im Projekt Möglichkeiten, wie man in Filmen Hintergrundgeräusche (Musik etc.) verringern kann, damit die Dialoge besser zu verstehen sind. Das heißt in der Fachsprache „CLEAN audio". Der Nutzer könnte sich dann beim Fernsehen diesen Extra-Ton mit reduzierten Hintergrundgeräuschen auswählen und ihn anstatt des „normalen" Tons hören. In diesem ersten „Vortest", an dem Sie dankenswerter Weise teilnehmen, soll es darum gehen, ein erstes Feedback zu erhalten.

Die DVD zeigt verschiedene Film-Ausschnitte. In manchen dieser Ausschnitte wurden Hintergrundgeräusche verringert. Insgesamt zeigt die DVD sechs kurze Film-**ABSCHNITTE** von höchstens 2 Minuten Länge. Diese sind über ein herkömmliches DVD-Menü anwählbar. Sie können sie also dort mit den Pfeiltasten („Steuerkreuz") oder mit den Tasten [1] bis [6] auf Ihrer Fernbedienung des DVD-Spielers abrufen.

Anleitung für den Test

Bitte schauen Sie sich nacheinander entspannt die einzelnen **ABSCHNITTE** *an und achten Sie darauf, wie gut Sie die Dialoge verstehen.*

Bitte beantworten Sie direkt nach dem Anschauen/Zuhören eines einzelnen **ABSCHNITTS** *immer gleich die dazugehörigen* **FRAGEN**. *Bitte schreiben Sie die* **ANTWORTEN** *gleich darunter an die vorgesehene Stelle. Während ein Abschnitt abgespielt wird, sehen Sie links unterhalb des Filmes seine Nummer* (z.B. **ABSCHNITT 1**).

Nun wünschen wir Ihnen viel Spass beim Testen!

Der Test

ABSCHNITT **1**	Bitte im DVD-Menü mit den Pfeiltasten auswählen.

Bei diesem **ABSCHNITT** wird immer nach 30 Sekunden zwischen der NORMAL-Version des Fernsehtones und einem bereinigten Ton mit weniger Hintergrundgeräuschen umgeschaltet. Begonnen wird mit der NORMAL-Version des Fernsehtons. Zur besseren Orientierung (falls nötig): In der Mitte sehen Sie einen waagrechten orangen Streifen, der an der Oberseite etwas zackig ist. Er stellt symbolisch die Hintergrundgeräusche dar. Wenn die Hintergrundgeräusche lauter sind, ist der Streifen dicker, wenn sie leiser sind, ist er dünnder. Rechts unterhalb des Films gibt es einen zusätzlichen Hinweis darauf, welcher Ton gerade abgespielt wird.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn ja, verstehen Sie den Dialog besser, wenn die Nebengeräusche leiser sind?

ANTWORT:

ABSCHNITT 2	Wird nach **ABSCHNITT 1** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen den gleichen Filmausschnitt wie in **ABSCHNITT 1**. Sie hören jetzt während der gesamten Zeit die NORMAL-Version des Fernsehtons.

FRAGE: Haben Sie das Gesprochene gut verstanden?

ANTWORT:

ABSCHNITT 3	Wird nach **ABSCHNITT 2** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen ein drittes Mal diesen gleichen Filmausschnitt. Jetzt hören Sie während der gesamten Laufzeit den bereinigten Ton mit weniger Nebengeräuschen.

FRAGE: Haben Sie das Gesprochene besser verstanden als in der NORMAL-version von **Abschnitt 2**?

ANTWORT:

ABSCHNITT

ABSCHNITT 4	Wird nach **ABSCHNITT 3** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Nun folgt ein nur knapp 30 Sekunden langes Stück. Dieses wird aber gleich viermal nacheinander angeboten. Sie hören hier ein Gespräch, das mit Musik unterlegt ist. Dabei werden nacheinander die Buchstaben **A, B, C** und **D** aufleuchten. Bei **A** ist die Musik am lautesten, und sie wird bis nach **D** hin immer leiser.

FRAGE: Ab wann haben Sie das Gesprochene gut verstehen können? (Z.B. schon ab **B**, ab **C**, erst ab **D**. Oder vielleicht war auch keine Wiederholung gut zu verstehen?)

ANTWORT:

ABSCHNITT 5	Wird nach **ABSCHNITT 4** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Wie in **ABSCHNITT 4** werden wieder vier verschiedene Stufen abgespielt, **A, B, C und D**. Die Unterschiede sind vielleicht weniger deutlich zu hören als in **ABSCHNITT 4**.

FRAGE: Ab wann haben Sie das Gesprochene gut verstehen können? (z.B. schon ab **B**, ab **C**, erst ab **D**. Oder vielleicht war auch keine Wiederholung gut zu verstehen?)

ANTWORT:

ABSCHNITT **6**	Wird nach **ABSCHNITT 5** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen zweimal nacheinander einen ca. eine Minute langen Filmausschnitt. Beim ersten Teil lassen wir in den **Sprechpausen** mehr Nebengeräusche zu. Danach kommt der gleiche Ausschnitt in der gewohnten, bereinigten Version, bei der die Nebengeräusche **durchgehend** reduziert werden.

FRAGE: Welche Version verstehen Sie besser?

ANTWORT:

Bitte geben Sie uns noch den Grad Ihrer Schwerhörigkeit an:

Grad der Schwerhörigkeit	Hörverlust	X
geringgradige Schwerhörigkeit	20-40%	
mittelgradige Schwerhörigkeit	40-60%	
hochgradige Schwerhörigkeit	60-80%	
Resthörigkeit	80-95%	
Art des Hörgerätes:		

Vortest: Bereinigte Tonspur im Projekt DTV4all

Allgemeiner Hintergrund

Die beiliegende DVD wurde im Projekt DTV4all von unserem Projektpartner Institut für Rundfunktechnik erstellt. Das Institut für Rundfunktechnik entwickelt im Projekt Möglichkeiten, wie man in Filmen Hintergrundgeräusche (Musik etc.) verringern kann, damit die Dialoge besser zu verstehen sind. Das heißt in der Fachsprache „CLEAN audio". Der Nutzer könnte sich dann beim Fernsehen diesen Extra-Ton mit reduzierten Hintergrundgeräuschen auswählen und ihn anstatt des „normalen" Tons hören. In diesem ersten „Vortest", an dem Sie dankenswerter Weise teilnehmen, soll es darum gehen, ein erstes Feedback zu erhalten.

Die DVD zeigt verschiedene Film-Ausschnitte. In manchen dieser Ausschnitte wurden Hintergrundgeräusche verringert. Insgesamt zeigt die DVD sechs kurze Film-**ABSCHNITTE** von höchstens 2 Minuten Länge. Diese sind über ein herkömmliches DVD-Menü anwählbar. Sie können sie also dort mit den Pfeiltasten („Steuerkreuz") oder mit den Tasten [1] bis [6] auf Ihrer Fernbedienung des DVD-Spielers abrufen.

Anleitung für den Test

Bitte schauen Sie sich nacheinander entspannt die einzelnen **ABSCHNITTE** *an und achten Sie darauf, wie gut Sie die Dialoge verstehen.*

Bitte beantworten Sie direkt nach dem Anschauen/Zuhören eines einzelnen **ABSCHNITTS** *immer gleich die dazugehörigen* **FRAGEN**. *Bitte schreiben Sie die* **ANTWORTEN** *gleich darunter an die vorgesehene Stelle. Während ein Abschnitt abgespielt wird, sehen Sie links unterhalb des Filmes seine Nummer* (z.B. **ABSCHNITT 1**).

Nun wünschen wir Ihnen viel Spass beim Testen!

Der Test

ABSCHNITT	Bitte im DVD-Menü mit den Pfeiltasten auswählen.
1	

Bei diesem **ABSCHNITT** wird einige Male zwischen der NORMAL-Version des Fernsehtones und einem bereinigten Ton mit weniger Hintergrundgeräuschen umgeschaltet. Begonnen wird mit der NORMAL-Version des Fernsehtons. Zur besseren Orientierung (falls nötig): Am unteren Bildrand in der Mitte sehen Sie einen waagrechten orangen Streifen, der an der Oberseite etwas zackig ist. Er stellt symbolisch die Hintergrundgeräusche dar. Wenn die Hintergrundgeräusche lauter sind, ist der Streifen dicker, wenn sie leiser sind, ist er dünner. Rechts unterhalb des Films gibt es einen zusätzlichen Hinweis darauf, welcher Ton gerade abgespielt wird.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn ja, verstehen Sie den Dialog besser, wenn die Nebengeräusche leiser sind?

ANTWORT:

ABSCHNITT 2	Wird nach **ABSCHNITT 1** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen den gleichen Filmausschnitt wie in **ABSCHNITT 1**. Sie hören jetzt während der gesamten Zeit die NORMAL-Version des Fernsehtons.

FRAGE: Haben Sie das Gesprochene gut verstanden?

ANTWORT:

ABSCHNITT 3	Wird nach **ABSCHNITT 2** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen ein drittes Mal diesen gleichen Filmausschnitt. Jetzt hören Sie während der gesamten Laufzeit den bereinigten Ton mit weniger Nebengeräuschen.

FRAGE: Haben Sie das Gesprochene besser verstanden als in der NORMAL-version von **Abschnitt 2**?

ANTWORT:

ABSCHNITT

ABSCHNITT 4	Wird nach **ABSCHNITT 3** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Nun folgt ein nur knapp 30 Sekunden langes Stück. Dieses wird aber gleich viermal nacheinander angeboten. Sie hören hier ein Gespräch, das mit Musik unterlegt ist. Dabei werden nacheinander die Buchstaben **A, B, C** und **D** aufleuchten. Bei **A** sind die Hintergrundgeräusche am lautesten, und sie sollten bis nach **D** hin immer leiser werden. Es sind teilweise nur kleine Unterschiede zwischen den Wiederholungen zu hören!

FRAGE: Wie gut haben Sie das Gesprochene verstehen können? Wie gut haben Sie das Gesprochene verstehen können? Bitte vergeben Sie jeweils für **A**, **B**, **C** und **D** Schulnoten (1=sehr gut ... 6=ungenügend)

ANTWORT: A=   **B**=   **C**=   **D**=

FRAGE: Klingt eine der Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT **5**	Wird nach **ABSCHNITT 4** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Wie in **ABSCHNITT 4** werden wieder vier verschiedene Stufen abgespielt, **A, B, C und D**.

FRAGE: Wie gut haben Sie das Gesprochene wiederum verstehen können? Bitte vergeben Sie jeweils für **A**, **B**, **C** und **D** Schulnoten (1=sehr gut ... 6=ungenügend)

(Das ist die gleiche Frage wie zu Abschnitt 4)

ANTWORT: A=   **B**=   **C**=   **D**=

FRAGE: Klingt eine der Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT 6	Wird nach **ABSCHNITT 5** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Sie sehen zweimal nacheinander einen ca. eine Minute langen Filmausschnitt, in dem relativ wenig gesprochen wird. Beim ersten Teil lassen wir in den **Sprechpausen** lautere Musik bzw. Nebengeräusche zu. Danach kommt der gleiche Ausschnitt mit weniger lauter Musik bzw. Nebengeräuschen. Bitte achten Sie auf die Zwischentitel, weil beide Teile "Clean Audio" Versionen sind und der orange Balken die ganze Zeit gleich aussieht.

FRAGE: Welche Version verstehen Sie besser und ist angenehmer für Sie?

ANTWORT:

Bitte geben Sie uns noch den Grad Ihrer Schwerhörigkeit an:

Grad der Schwerhörigkeit	Hörverlust	X
geringgradige Schwerhörigkeit	20-40%	
mittelgradige Schwerhörigkeit	40-60%	
hochgradige Schwerhörigkeit	60-80%	
Resthörigkeit	80-95%	
Art des Hörgerätes:		

Test: Bereinigte Tonspur im Projekt DTV4all

Allgemeiner Hintergrund

Die beiliegende DVD wurde im Projekt DTV4all von unserem Projektpartner Institut für Rundfunktechnik erstellt. Das Institut für Rundfunktechnik entwickelt im Projekt Möglichkeiten, wie man in Filmen Hintergrundgeräusche (Musik etc.) verringern kann, damit die Dialoge besser zu verstehen sind. Das heißt in der Fachsprache „Clean Audio". Der Nutzer könnte sich dann beim Fernsehen diesen Extra-Ton mit reduzierten Hintergrundgeräuschen auswählen und ihn anstatt des „normalen" Tons hören. In diesem Test, an dem Sie dankenswerter Weise teilnehmen, sollen Sie als mögliche künftige Nutzer einer solchen Technologie diese beurteilen.

Es werden im Test verschiedene Möglichkeiten des Clean Audio vorgestellt. So soll beispielsweise der normale Ton mit einem bereinigten Ton verglichen werden. Ist der bereinigte Ton für Sie besser verständlich? Oder es werden verschiedene Versionen von bereinigtem Ton gezeigt, und Sie sollen beurteilen wie verständlich diese Versionen für Sie sind.

Anleitung für den Test

Der Test ist in insgesamt neun **TEST-ABSCHNITTE** unterteilt. In jedem **TEST-ABSCHNITT** wird ein Ausschnitt aus einem Film in verschiedenen Ton-Versionen gezeigt. Im vorliegenden Fragebogen beurteilen Sie die Verständlichkeit der einzelnen Ausschnitte.

Die einzelnen **TEST-ABSCHNITTE** sind über ein herkömmliches DVD-Menü anwählbar. Sie können sie also dort mit den Pfeiltasten („Steuerkreuz") oder mit den Tasten [1] bis [9] auf Ihrer Fernbedienung des DVD-Spielers abrufen.

Schauen Sie sich die einzelnen **TEST-ABSCHNITTE** nacheinander entspannt an und achten Sie darauf, wie gut Sie die Dialoge verstehen.

Bitte beantworten Sie direkt nach dem Anschauen/Zuhören eines einzelnen **ABSCHNITTS** immer gleich die dazugehörigen **FRAGEN**. Bitte schreiben Sie die **ANTWORTEN** gleich darunter an die vorgesehene Stelle. Während ein Abschnitt abgespielt wird, sehen Sie links unterhalb des Filmes seine Nummer (z.B. **ABSCHNITT 1**).

Bitte benutzen Sie für den Test genau die Hilfsmittel, die Sie auch sonst benutzen wenn Sie Fernsehen schauen. Bitte wechseln Sie nicht **extra** vom Kopfhörer zum Hörgerät oder Ähnliches, damit Sie die Clean Audio Version vielleicht besser hören können. Das Ergebnis soll ja realistisch sein, d.h. die Technologie muss unter IHREN normalen Hörbedingungen, mit Ihren täglichen Hilfsmitteln funktionieren.

Der Test

ABSCHNITT **1**	Bitte im DVD-Menü mit den Pfeiltasten auswählen.

In diesem ersten **ABSCHNITT** sehen sie zunächst einen Filmausschnitt mit NORMAL-Version des Fernsehtones. Anschließend kommt der gleiche Filmausschnitt noch einmal, diesmal aber in einer anderen Version mit bereinigtem Ton mit weniger Hintergrundgeräuschen (Clean Audio). *Zur besseren Orientierung (falls nötig): Am unteren Bildrand in der Mitte sehen Sie einen waagrechten orangen Streifen, der an der Oberseite etwas zackig ist. Er stellt symbolisch die Hintergrundgeräusche dar. Wenn die Hintergrundgeräusche lauter sind, ist der Streifen dicker, wenn sie leiser sind, ist er dünner. Rechts unterhalb des Films gibt es einen zusätzlichen Hinweis darauf, welcher Ton gerade abgespielt wird.*

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn oben mit ja geantwortet: Verstehen Sie den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser?

Bitte bewerten Sie die Verständlichkeit von Version 2 mit einer Schulnote

(1=sehr gut.....6=ungenügend).

ANTWORT:

ABSCHNITT 2	Wird nach **ABSCHNITT 1** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In **ABSCHNITT 2** folgt ein Ausschnitt aus einem anderen Film. Wieder kommt zuerst eine NORMAL-Version des Ausschnitts und dann wieder eine Clean Audio-Version mit bereinigtem Ton.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn oben mit Ja geantwortet: Verstehen Sie den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser?

Bitte bewerten Sie die Verständlichkeit von Version 2 mit einer Schulnote

(1=sehr gut.....6=ungenügend).

ANTWORT:

ANTWORT:

ABSCHNITT 3	Wird nach **ABSCHNITT 2** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In diesem Filmausschnitt von **ABSCHNITT 3** sind die Sprechenden meist nicht zu sehen. Ansonsten ist die Abfolge gleich wie in **ABSCHNITT 1** und **2**: Zuerst die NORMAL-Version, dann wieder eine Clean Audio-Version mit bereinigtem Ton.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn oben mit Ja geantwortet: Verstehen Sie den Radiosprecher im Film und den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser? Bitte bewerten Sie die Verständlichkeit von Version 2 mit einer Schulnote.

(1=sehr gut.....6=ungenügend).

ANTWORT:

ANTWORT:

ABSCHNITT 4	Wird nach **ABSCHNITT 3** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Beim Testbeispiel **4** gibt es insgesamt drei verschiedene Versionen. Zuerst kommt ein Ausschnitt in der normalen Fassung. Dann kommen *zwei* verschiedene Clean Audio Versionen. Auf Ihrem Bildschirm werden die insgesamt drei verschiedenen Versionen durch Buchstaben angezeigt:

N= NORMAL

a= Erste Version Clean Audio

b= Zweite Version Clean Audio

FRAGE: Wie gut haben Sie die einzelnen Versionen verstehen können? Bitte vergeben Sie für jede Version eine Schulnote.

(**1=sehr gut .....6=ungenügend**).

ANTWORT:

Note für N= NORMAL:

Note für a= Erste Version Clean Audio:

Note für b= Zweite Version Clean Audio:

FRAGE: Klingt eine der beiden Clean Audio Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT 5	Wird nach **ABSCHNITT 4** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

Wie in **ABSCHNITT 4** werden wieder zwei Clean Audio Versionen vorgestellt; die Abfolge ist also wieder:

N= NORMAL

a= Erste Version Clean Audio

b= Zweite Version Clean Audio

FRAGE: Wie gut haben Sie die drei Versionen verstehen können? Bitte vergeben Sie wieder Schulnoten für jede Version (**1=sehr gut.....6=ungenügend**).

ANTWORT:

Note für N= NORMAL:

Note für a= Erste Version Clean Audio:

Note für b= Zweite Version Clean Audio:

FRAGE: Klingt eine der drei Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT **6**	Wird nach **ABSCHNITT 5** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In **ABSCHNITT 6** gibt es einen längeren durchlaufenden Filmausschnitt zu beurteilen. Diesmal gibt es keine einzelnen abgetrennten Versionen von NORMAL und Clean Audio. Stattdessen wird ohne Pause WÄHREND DES LAUFENDEN FILMAUSSCHNITTS von NORMAL zu Clean Audio gewechselt. Es beginnt mit der NORMAL-Version, dann folgen drei Clean Audio Varianten.

N= NORMAL

a= Variante 1 Clean Audio

b= Variante 2 Clean Audio

c= Variante 3 Clean Audio

Bei der Orientierung hilft der **orange-farbene** "Geräusch-Balken" unterhalb des Bildes, über den die weiße Markierungslinie streicht.

Die Umgebungsgeräusche sind dieses Mal relativ laut. Bitte konzentrieren Sie sich auf den **Sport-Kommentator**, da nur seine Stimme in allen 4 Teilstücken vorkommt.

FRAGE: Wie gut haben Sie das Gesprochene in jedem Teilstück verstehen können? Bitte vergeben Sie dieses Mal vier Schulnoten

(**1=sehr gut.....6=ungenügend**).

Note für N= Teilstück NORMAL:

Note für a= Teilstück Variante 1 Clean Audio:

Note für b= Teilstück Variante 2 Clean Audio:

Note für c= Teilstück Variante 3 Clean Audio:

FRAGE: Klingt eine der vier Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT 7	Wird nach **ABSCHNITT 6** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In **ABSCHNITT 7** gibt es wieder einzelne, voneinander abgetrennte Versionen von ein und demselben Filmausschnitt. Das kennen Sie bereits aus den **ersten fünf TEST-ABSCHNITTEN.** Es kommen insgesamt vier verschiedene Versionen. Zuerst kommt ein Ausschnitt in der normalen Fassung. Dann kommen drei verschiedene Clean Audio Versionen. Auf Ihrem Bildschirm werden die insgesamt vier verschiedenen Versionen wieder durch Buchstaben angezeigt:

N= NORMAL

a= Erste Version Clean Audio

b= Zweite Version Clean Audio

c= Dritte Version Clean Audio

FRAGE: Wie gut haben Sie die einzelnen Versionen verstehen können? Bitte vergeben Sie für jede Version eine Schulnote (**1=sehr gut .....6=ungenügend**).

ANTWORT:

Note für N= NORMAL:

Note für a= Erste Version Clean Audio:

Note für b= Zweite Version Clean Audio:

Note für c= Dritte Version Clean Audio:

FRAGE: Klingt eine der Versionen besonders angenehm oder unangenehm?

ANTWORT:

ABSCHNITT 8	Wird nach **ABSCHNITT 7** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In **ABSCHNITT 8** ist noch einmal ein einfacher Vergleich vorgesehen: Ein Filmausschnitt wird zuerst in der NORMAL-Version des Tones gezeigt, und dann in einer Clean Audio Version wiederholt.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn ja, verstehen Sie den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser? Bitte bewerten Sie die Verständlichkeit mit einer Schulnote.

 (**1=sehr gut.....6=ungenügend**).

ANTWORT:

ABSCHNITT 9	Wird nach **ABSCHNITT 8** automatisch abgespielt oder aus dem DVD-Menü heraus mit den Pfeiltasten ausgewählt.

In **ABSCHNITT 9** geschieht das gleiche wie in **ABSCHNITT 8.** Ein Filmausschnitt wird zuerst in der NORMAL-Version des Tones gezeigt, und dann in einer Clean Audio Version wiederholt.

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn ja, verstehen Sie den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser? Bitte bewerten Sie die Verständlichkeit mit einer Schulnote.

 (**1=sehr gut.....6=ungenügend**).

ANTWORT:

FRAGE: Fallen Ihnen beim Zuhören Unterschiede auf?

ANTWORT:

FRAGE: Wenn ja, verstehen Sie den Dialog in der zweiten Version, in der die Nebengeräusche leiser sein sollen, besser? Bitte bewerten Sie die Verständlichkeit mit einer Schulnote

(**1=sehr gut.....6=ungenügend**).

ANTWORT:

Bitte geben Sie uns zum Schluss noch den Grad Ihrer Schwerhörigkeit an:

Grad der Schwerhörigkeit	Hörverlust	X
geringgradige Schwerhörigkeit	20-40%	
mittelgradige Schwerhörigkeit	40-60%	
hochgradige Schwerhörigkeit	60-80%	
Resthörigkeit	80-95%	
Art des Hörgerätes		
Weiteres Hilfsmittel		

Vielen Dank für die Teilnahme !

10.3 Questionnaire concerning Text-to-Speech:

Pre-Task-Fragen:

Vor dem Beginn des eigentlichen Tests werden der Testperson folgende Fragen gestellt:

1. **Haben Sie zu Hause einen Computer?**
   - ☐ Ja
   - ☐ Nein

2. **Wie oft nutzen Sie den Computer?**
   - ☐ Nie
   - ☐ Einmal im Monat
   - ☐ Mehrmals in der Woche
   - ☐ Einmal in der Woche
   - ☐ Täglich

3. **Wofür nutzen Sie Ihren Computer?**
   - ☐ Internet
   - ☐ Audio/Video
   - ☐ Email
   - ☐ Office/Schreiben
   - ☐ Sonstiges: _____

4. **Wenn Sie ihren Computer für Audio/Video nutzen, für welche Art von Inhalten?**
   - ☐ CDs/DVDs
   - ☐ Podcasts
   - ☐ Mediatheken
   - ☐ Fernsehempfang

5. **Besitzen Sie einen Fernseher?**
   - ☐ Ja
   - ☐ Nein

6. **Wenn ja, wie oft nutzen Sie Ihren Fernseher?**
   - ☐ Nie
   - ☐ Einmal im Monat
   - ☐ Mehrmals in der Woche
   - ☐ Einmal in der Woche
   - ☐ Täglich

7. **Kennen Sie Videotext?**
   - ☐ Ja
   - ☐ Nein

8. **Haben Sie den Videotext schon einmal genutzt?**
   - ☐ Ja
   - ☐ Nein

9. **Wenn ja, wie konnten Sie den Videotext nutzen?**

☐ Im Internet mit einem Screenreader oder einer Braillezeile

☐ Am Computer, mit speziellen TV-Karten

☐ Mit einem speziellen Text-Lesesystem

10. Nutzen Sie eine digitale Set-Top-Box?

☐ ja

☐ nein

11. Haben Sie schon mal eine Fernseh-Sendung aufgezeichnet

☐ Ja

☐ Nein

12. Wie haben Sie aufgezeichnet?

☐ TV

☐ DVD

☐ VHS

☐ HD

13. Hören Sie Radio?

☐ Ja

☐ Nein

14. Wie oft nutzen Sie das Radio?

☐ Nie

☐ Einmal im Monat

☐ Mehrmals in der Woche

☐ Einmal in der Woche

☐ Täglich

15. Mit welchem Gerät nutzen Sie das Radio?

☐ Herkömmliches Radio-Empfangsgerät

☐ Über meine digitale Set Top Box

☐ Computer (Internet)

☐ Sonstiges: _____

16. Haben Sie schon einmal eine Audio-Aufzeichnung erstellt

☐ Ja

☐ Nein

17. (Radio, CD, Kassette, HD)?

☐ CD

☐ Kassette

☐ HD

Bereich 1 – TV gucken, EPG nutzen

1. Können Sie bitte das Hauptmenü aufrufen?

Gestarteter AMMEC,

TV-Bild und –ton vorhanden.

ARD eingestellt.

→ Menü-Taste gedrückt.

OSD mit 9 + 3 Unterpunkten sowie Farbtasten-Feldern

	Ja	Mit Hilfe	Nein
1.1. Erkennen des Menü-Buttons als Zugang zum Speaking Interface.			
1.2. Beobachtung ob der Nutzer das Menü ausprobiert (hoch/runter).			
1.3. Navigation in Ebene 1. Verständnis Zusammenspiel Speaking Interface mit Fernbedienung (*OK-Taste oder Zahlen*)			

2. Bitte schalten Sie auf RBB Berlin um.

→ Menü

2 Kanäle,

→ OK oder → Pfeiltasten (hoch, runter)

RBB Berlin

→ OK

	Ja	Mit Hilfe	Nein
2.1. Verständnis des Hauptmenüs bzw Pfeiltasten (Steuerkreuz)			
2.2. Navigation in Ebene 2.			
2.3. Verständnis Zusammenspiel Speaking Interface mit Fernbedienung (*Ziffern-, und OK-Taste oder Pfeiltasten*)			

3. Bitte schalten Sie auf "Das Erste" um.

→ Menü

2 Kanäle,

→ OK oder → Pfeiltasten (hoch, runter)

Das Erste

→ OK

	Ja	Mit Hilfe	Nein
3.1. Wiederholung Hauptmenü bzw. Pfeiltasten (Steuerkreuz)			
3.2. Navigation in Ebene 2.			
3.3. Verständnis Zusammenspiel Speaking Interface mit Fernbedienung (Ziffern-, Pfeil-, OK-Taste)			

A. User Bewertung	Einfach	Machbar	kompliziert	zu kompliziert
Wie einfach war es für Sie umzuschalten?				

*Begründen Sie ihre Antwort kurz.

4. **Suchen Sie bitte die Zusatzinformationen zur RBB-Sendung um 20:15 Uhr.**

→ *Menü*

→ *GRÜN oder 1 Programm,*

→ *OK*

Vertikaler EPG

<Datum> 20:15 <Sendung>

	Ja	Mit Hilfe	Nein
4.1. Wiederholung Hauptmenü			
4.2. Navigation in noch unbekannter Ebene 2.			
4.3. Erfassen neuer Art von Informationen (Programm-Daten)			

B. User Bewertung	Einfach	Machbar	komplizie	zu kompliziert
Wie einfach war es für die Zusatzinformationen zu finden?				

*Begründen Sie ihre Antwort kurz.

Bereich 2 – Videotext

Rufen Sie bitte den Videotext des RBB auf. Gehen Sie auf die Seite 112 und danach auf die erste Meldung auf Seite 118 und lassen sich die Seite vorlesen.

→ *Menü*

6 Videotext

→ *OK*

VT-Seite 100

→ *112*

VT-Nachrichtenseite 112

→ *118*

Nachricht lesen

	Ja	Mit Hilfe	Nein
1.1. Wiederholung Hauptmenü ohne Hinweis darauf			
1.2. Navigation in noch unbekannter Ebene 2.			
1.3. Erfassen der Videotext-Informationen			
1.4. Navigation im Videotext			

C. User Bewertung	Einfach	Machbar	kompliziert	zu kompliziert
Wie einfach war es für Sie den Videotext zu				

*Begründen Sie ihre Antwort kurz.

DTV4All WP3 – Speaking EPG

Document ref.: Past-Tasks_deutsch.doc

Fragen nach den Tasks

1. Allgemeines Feedback Ammec

    a. Was gefällt Ihnen am Ammec am besten?

    _____
    _____
    _____
    _____

    b. Was gefällt Ihnen am Ammec am wenigsten?

    _____
    _____
    _____
    _____

Würden Sie generell eine Sprachausgabe für den Fernseher nutzen?

_____

_____

_____

_____

2. Einstellungen Sprachausgabe

    a. Wie wichtig finden Sie, dass der Nutzer die Lautstärke der Sprachausgabe einstellen kann?

        ☐ sehr wichtig

        ☐ wichtig

        ☐ unwichtig

    b. Wie wichtig finden Sie es, dass die Lautstärke der Sprachausgabe unabhängig von der Lautstärke der Audio/Video-Wiedergabe einstellbar ist?

        ☐ sehr wichtig

        ☐ wichtig

        ☐ unwichtig

    c. Wie wichtig finden Sie, dass der Nutzer die Geschwindigkeit der Sprachausgabe einstellen kann?

        ☐ sehr wichtig

        ☐ wichtig

        ☐ unwichtig

3. Fernbedienung

4. Bewerten Sie die Haptik der Fernbedienung des Ammec.

	Zu klein	genau richtig	zu groß
Größe:	☐	☐	☐
Tastengröße:	☐	☐	☐

5. Kommentieren Sie Ihre Erfahrungen mit der Fernbedienung des Ammec

_____

_____

_____

_____

6. Was ist Ihnen an einer Fernbedienung wichtig?

	Sehr wichtig	wichtig	unwichtig
☐ Tastbare Symbole auf den Tasten:	☐	☐	☐
☐ Tonsignal bei Tastendruck	☐	☐	☐
☐ Vibration bei Tastendruck	☐	☐	☐
☐ Sprachausgabe bei Tastendruck	☐	☐	☐

Welche Funktionen an einer Fernbedienung sind für Sie wichtig?

	Sehr wichtig	wichtig	unwichtig
nächster und vorheriger Kanal	☐	☐	☐
lauter und leiser	☐	☐	☐
stumm	☐	☐	☐
ein/aus	☐	☐	☐
Zahlen	☐	☐	☐
Videotext	☐	☐	☐

7. Welche Funktionalitäten sollte Ihre Sprachausgabe für den Fernseher bereitstellen?

	Sehr wichtig	wichtig	unwichtig
Programminformationen	☐	☐	☐
Videotext	☐	☐	☐
Sendungen aufzeichnen	☐	☐	☐
Aufzeichnungen schneiden	☐	☐	☐
Radiosender wechseln	☐	☐	☐
Radiosendungen aufzeichnen	☐	☐	☐
CD abspielen	☐	☐	☐
DVD abspielen	☐	☐	☐

10.4 Questionnaires concerning Demonstrator of an Enhanced Text Service

Pre-Task-Fragen:

Vor dem Beginn des eigentlichen Tests werden der Testperson folgende Fragen gestellt:

18. Haben Sie zu Hause einen Computer?

☐ Ja

☐ Nein

19. Wie oft nutzen Sie den Computer?

☐ Nie

☐ Einmal im Monat

☐ Mehrmals in der Woche

☐ Einmal in der Woche

☐ Täglich

20. Wofür nutzen Sie Ihren Computer?

☐ Internet

☐ Audio/Video

☐ Email

☐ Office/Schreiben

☐ Sonstiges: _____

21. Besitzen Sie einen Fernseher?

☐ Ja

☐ Nein

22. Wenn ja, wie oft nutzen Sie Ihren Fernseher?

☐ Nie

☐ Einmal im Monat

☐ Mehrmals in der Woche

☐ Einmal in der Woche

☐ Täglich

23. Kennen Sie Videotext?

☐ Ja

☐ Nein

24. Wenn ja, wie oft nutzen Sie Videotext?

☐ Nie

☐ Einmal im Monat

☐ Einmal in der Woche

☐ Mehrmals in der Woche

☐ Täglich

25. Bewerten Sie mit einer Schulnote 1-6 die Lesbarkeit der Schriftgröße des derzeitigen Videotextes.

26. Beurteilen Sie mit einer Schulnote 1-6 die Lesbarkeit der Farben des derzeitigen Videotextes.

27. Kennen Sie die Möglichkeit, im Videotext die Schrift zu vergrößern?

☐ ja

☐ nein

28. Wenn ja, haben Sie die Schriftvergrößerung schon mal benutzt?

☐ ja   Wie häufig?.................

☐ nein

29. Wenn ja, ist die doppelte Schriftgröße für Sie groß genug?

30. Nutzen Sie eine digitale Set-Top-Box?

☐ ja

☐ nein

Tasks: Aufgaben Nutzertest Hbb-TV Text

1. Können Sie bitte die Einstellungsmöglichkeiten für eine barrierefreie Version des ARD Textes aufrufen?

Gestartete Box,

TV-Bild und –ton vorhanden.

→ *ARD Text gedrückt.*

→ *Nutzer drückt „barrierefrei"*

	Ja	Mit Hilfe	Nein
4.4. **Verständnis und Sehen** des Menü-Buttons „barrierefrei" als Zugang zu den Einstellungen der barrierefreien Version			
4.5. Verständnis der Pfeil und der OK Taste/n			

User Bewertung	Einfach	Machbar	Kompliziert	zu kompliziert
Wie einfach war es für Sie die Einstellungsmöglichkeiten zur barrierefreien Gestaltung aufzurufen?				
Erläutern Sie bitte kurz: warum kompliziert oder zu kompliziert?				

2. Bitte stellen Sie den Text nun so ein wie Sie persönlich es brauchen!

(Seite „Einstellungen barrierefrei" als Ausgangsposition)

→ *Nutzer wählt die entsprechenden Einstellungen mit den Pfeiltasten aus und bestätigt mit*

→ *OK*

	Ja	Mit Hilfe	Nein
4.6. **Verständnis und Sehen** dieser Einstiegsseite und der Einstellungsoptionen in der Gesamtheit			
4.7. Wiederholung: Verständnis der Pfeil und der OK Taste/n			

User Bewertung	Einfach	Machbar	Kompliziert	zu kompliziert
Wie einfach war es für Sie den Text so einzustellen wie Sie persönlich es brauchen?				
Warum kompliziert oder zu kompliziert?				

Anmerkung: Am Ende dieses Tasks sollte der Nutzer, gegebenenfalls auch mit Hilfestellung, den Kontrast eingestellt haben, der zu ihm passt.

Er sollte NICHT die Sprachausgabe eingestellt haben, damit wir sehen können bis zu welcher Sehbehinderung die Schriftvergrößerung ausreichend ist.

3. Bitte stellen Sie die Schriftvergrößerung ein falls Sie dies noch nicht getan haben!

(Seite „Einstellungen barrierefrei" als Ausgangsposition)

→*Nutzer wählt Einstellung „Schriftvergrößerung" und bestätigt mit*

→ *OK*

	Ja	Mit Hilfe	Nein
3.1 Verständnis und Sehen der Einstellungsoption „Schrift vergrößern".			

User Bewertung	Einfach	Machbar	Kompliziert	zu kompliziert
Wie einfach war es für Sie die Schriftvergrößerung einzustellen?				
Warum kompliziert oder zu kompliziert?				

4. Gehen Sie jetzt bitte zu der Seite mit den Wirtschaftsnachrichten

(Seite Einstellungen barrierefrei als Ausgangsposition)

→ *Wechsel zur Menüleiste*

→ *Auswahl Wirtschaft*

→ *OK*

Oder

Direkte Zahleneingabe (Zahlen waren dann aber nicht vergrößert)

Oder

→ *Wechsel zur Menüleiste*

Und dann (vergrößerte) Zahleneingabe

	Ja	Mit Hilfe	Nein
4.8. Verständnis des Navigationsprinzips (von der Mitte zur Menüleiste und wieder zurück)			
4.9. Sehen der Bezeichnungen auf der Menüleiste			
4.10. Gegebenfalls: Verstehen / Sehen der Zahlennavigation			

User Bewertung	Einfach	Machbar	Kompliziert	zu kompliziert
Wie einfach war es für Sie die Wirtschaftsnachrichten zu finden?				
Warum kompliziert oder zu kompliziert?				

5. Lesen Sie jetzt bitte die Nachricht „Quelle: Ausverkauf „weißer Ware"

(Wirtschaftsnachrichtenseite als Ausgangsposition)

→ *Scrollen durch die Nachrichtenübersicht*

→ *Auswahl der Nachricht*

→ *OK*

Oder

Statt OK Zahleneingabe

	Ja	Mit Hilfe	Nein
4.11. Verständnis des Scroll-Prinzips von Nachrichtentitel zu Nachrichtentitel			
4.12. Sehen der Nachrichtentitel im gewählten Kontrast			
4.13. Verständnis OK oder Zahlen zur Auswahl der Nachricht			
4.14. Sehen des Meldungstextes im gewählten Kontrast			

User Bewertung	gut	ausreichend	Schlecht	gar nicht
Konnten Sie die Nachricht gut lesen?				
Warum schlecht oder gar nicht lesbar?				

6. Lesen Sie jetzt bitte die nächste Nachricht (Maschinenbauer…..)

(Meldung „Quelle" als Ausgangsposition)

Entweder:

→ *Scrollen durch diese Nachricht und dann über Richtungstaste nach unten „automatisch" zur nächsten Meldung gelangen (Maschinenbauer….)*

oder

→ *OK*

Oder (umständlicher Weg)

Zurück zur Menüleiste, wieder Seite anwählen, dann runter zum folgenden Nachrichtentitel scrollen, dann diesen aktivieren

	Ja	Mit Hilfe	Nein
4.15. Verständnis des Blätter-Prinzips von Nachricht zu Nachricht im Wechsel mit dem Scrollen durch einen einzelnen Nachrichtentext.			

User Bewertung	einfach	machbar	Kompliziert	zu kompliziert
Wie einfach war es für Sie die nächste Meldung zu finden?				
Warum kompliziert oder zu kompliziert?				

Falls der „umständliche Weg" gewählt wurde, bitte noch auf den zweiten Weg hinweisen – wir brauchen Feedback zu der Scroll/Blätter-Lösung

!! ACHTUNG: TON ANSCHALTEN !!

7. Wählen Sie nun bitte die Einstellung „ARD Text vorlesen lassen".

(Meldung „Maschinenbauer" als Ausgangsposition)

→ *Zurück zur Menüleiste*

→ *Barrierefrei*

→ *ARD Text vorlesen lassen*

→*OK*

	Ja	Mit Hilfe	Nein
4.16. Wiederholung: **Verständnis und Sehen** der Navigation (Gelangen zur Seite „Einstellungen zur Barrierefreiheit".			
4.17. Wiederholung: **Verständnis und Sehen** der Einstellungsseite und der Einstellungsoptionen in der Gesamtheit			
4.18. Wiederholung: Verstehen, Sehen und Auswählung einer bestimmten Einstellungsoption			

User Bewertung	einfach	machbar	Kompliziert	zu kompliziert

Wie einfach war es für Sie „ARD Text vorlesen lassen" einzustellen?				
Warum kompliziert oder zu kompliziert?				

8. Gehen Sie nun bitte zur Nachrichtenseite

(Seite Einstellungen barrierefrei als Ausgangsposition)

→ *Wechsel zur Menüleiste („barrierefrei") Menüleiste wird in Gänze vorgelesen*

→*Auswahl Nachrichten über die Zahleneingabe nachdem er diese gehört hat*

→*Nachrichtenüberblick wird vorgelesen*

	Ja	Mit Hilfe	Nein
4.19. **Verstehen und Verständnis** der sprachgesteuerten Navigation auf der Menüebene			

User Bewertung	ja	nein
Hat Ihnen die Sprachausgabe beim Finden der Nachrichtenseite geholfen?		

Warum nein? Warum ja?		

9. Lassen Sie sich bitte die Nachricht „Länder wollen strengere Vorgaben für Bankdaten-Weitergabe**" vorlesen**

(gesprochene Nachrichtenüberblicksseite als Ausgangsposition)

→ *Nutzer wählt über Zahleneingabe Nachricht aus*

→ *Nutzer hört sich Nachricht an*

	Ja	Mit Hilfe	Nein
4.20. **Verstehen und Verständnis** der sprachgesteuerten Navigation auf der Ebene der Meldungsübersichten			
4.21. Verstehen der Sprachausgabe des Meldungstextes			

User Bewertung	ja	nein
Hat Ihnen die Sprachausgabe beim Finden der Nachricht geholfen?		
Warum nein? Warum ja?		

Wie gut haben Sie die Meldung verstanden?	Gut	Ausreichend	Schlecht	Gar nicht

Past Task Questions

7. Allgemeines Feedback ARD Text barrierefrei

   a. Was gefällt Ihnen am barrierefreien ARD Text am besten?

   _____
   _____
   _____
   _____
   _____

   b. Was gefällt Ihnen am barrierefreien ARD Text am wenigsten?

   _____
   _____
   _____
   _____
   _____

2. Grundsatzfragen

   a. Würden Sie generell einen solchen neuartigen Textservice am Fernsehgerät nutzen wenn er für Sie barrierefrei ist?

_____

_____

_____

_____

_____

_____

b. Es gibt verschiedene Möglichkeiten, einen barrierefreien neuartigen Textservice für den Fernseher anzubieten. Was bevorzugen Sie persönlich?

1. ☐ Die barrierefreie Anpassung des existierenden Text-Services (so wie heute getestet).

2. ☐ Eine grafisch reduzierte reine Text-Version, die speziell für Sehbehinderte erstellt und angeboten wird.

_____

_____

_____

_____

_____

_____

3. Einstellungen zur Barrierefreiheit

Schriftgröße

a. Wie war für Sie persönlich den Grad der Schriftvergrößerung im Test?

☐ angemessen / ausreichend

☐ zu klein

☐ zu groß

b. Wie wichtig ist es für Sie persönlich, die Schriftgröße verändern zu können?

☐ sehr wichtig

☐ wichtig

☐ unwichtig

Sprachausgabe

a. Wie wichtig ist die Sprachausgabe für Sie persönlich?

☐ sehr wichtig

☐ wichtig

☐ unwichtig

b. Wie wichtig ist es für Sie persönlich, die Sprachgeschwindigkeit verändern zu können?

☐ sehr wichtig

☐ wichtig

☐ unwichtig

c. Haben Sie noch Bemerkungen zur Sprachausgabe?

_____

_____

_____

_____

_____

_____

Kontrast/Farbvariationen

a. Wie wichtig sind für Sie persönlich unterschiedliche Farb- und Kontrastvarianten zur Auswahl?

☐ sehr wichtig

☐ wichtig

☐ unwichtig

b. Welche Farb- und Kontrastvarianten benötigen Sie persönlich für einen barrierefreien Zugang?

	Sehr wichtig	wichtig	unwichtig
☐ Weiß auf Schwarz	☐	☐	☐
☐ Schwarz auf Weiß	☐	☐	☐
☐ Gelb auf Schwarz	☐	☐	☐
☐ Grün auf Schwarz	☐	☐	☐

☐ Blau auf Weiß	☐	☐	☐
☐ Gelb auf Lila	☐	☐	☐
☐ Gelb auf Blau	☐	☐	☐
☐ Weiß auf Lila	☐	☐	☐
☐ Weiß auf Blau	☐	☐	☐
☐ Gelb auf Rot	☐	☐	☐
☐ Grün auf Blau	☐	☐	☐
☐ Gelb auf Grün	☐	☐	☐
☐ Grün auf Lila	☐	☐	☐
☐ Grün auf Weiß	☐	☐	☐
☐ Grün auf Rot	☐	☐	☐
☐ Rot auf Schwarz	☐	☐	☐
☐ Weiß auf Grün	☐	☐	☐
☐ Weiß auf Rot	☐	☐	☐
☐ Blau auf Grün	☐	☐	☐

Schriftart

a. Wie wichtig sind für Sie persönlich unterschiedliche Schrifttypen zur Auswahl?

☐ sehr wichtig

☐ wichtig

☐ unwichtig

4. Fragen zur Gestaltung der Farbtasten

Wir haben bei unserem Test heute das Thema „Farbtasten" ausgeklammert, da es nicht direkt mit der barrierefreien Gestaltung dieses Dienstes zu tun hat. Farbtasten werden aber bei den neuen internet-ähnlichen Diensten für den Fernseher eine wichtige Rolle spielen. Sie werden dort als „Buttons" benutzt um aus dem Fernsehprogramm heraus Dienste aufzurufen, z.B. den Text-Service, den Sie heute getestet haben.

Wir brauchen von Ihnen Anregungen wie wir die Farbtasten barrierefrei gestalten können. Hier sind einige Vorschläge.

	Sehr gut	gut	schlecht
FT auf Fernbedienung und Bildschirmbuttons sind durch Form und Farbe gekennzeichnet	☐	☐	☐
Bildschirmbuttons sind durch a), b), c), d) gekennzeichnet	☐	☐	☐
Bildschirmbuttons sind durch FT1, FT2, FT3, FT4 gekennzeichnet	☐	☐	☐

5. Haben Sie noch abschließende Bemerkungen zur barrierefreien Gestaltung neuartiger Text-Dienste für den Fernseher?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

10.5 Colour table concerning the readability of Enhanced Text Services

This table was generated by a German research project dealing with optimisation of contrast. In consultation with the associations of the disabled it was decided to offer the options - here marked blue. (The original text is white on blue).

Foreground[4]	Background	Contrast
White	Achromatic (Black)	≥ 0,91 to ≤ 0,99
Black	Achromatic **(White)**	≥ |0,97| to ≤ |0,99| *
Yellow	Achromatic	≥ 0,89 to ≤ 0,99
Green	Achromatic	≥ 0,88 to ≤ 0,98
Blue	Achromatic **(White)**	**≥ |0,84| to ≤ |0,95| ***
Yellow	purple	≥ 0,90
Yellow	blue	≥ 0,87
White	Purple	≥ 0,92
White	**Blue**	≥ 0,98
Green	Blue	≥ 0,91
Yellow	Rot	≥ 0,83

Tab. 2: Optimum contrast (selection) according to 231 sight impaired users (selection criteria: high physical contrast as well and strong preference by the users.

10.6 Questionnaire concerning Audio Description via IP:

Qüestionaris per a usuaris de serveis d'accessibilitat emergents.

Respostes a tests sobre les modalitats de serveis.

Aquestes sèries de preguntes han de ser contestades pels usuaris de cada un dels serveis sobre els quals s'han de fer tests en un moment no posterior a la realització de la prova en més d'una hora.

El text que segueix serà formatat de manera que es puguin escriure les respostes en els mateixos fulls de preguntes, i separats de forma convenient.

La instal·lació destinada a fer la prova ha de ser el més semblant possible a una situació real. Per a cada test s'ha de fer una descripció de la instal·lació. Com és l'entorn i quines són les circumstàncies que poden influir en el resultat. Si l'usuari té algun coneixement previ i altres observacions d'utilitat.

Q a/0- Prova sobre audiodescripció sobre un canal DVB-IP

- Nom d'aquesta prova.
- Descripció del muntatge tècnic (una per a cada la sèrie de proves).
- Descripció del sistema de reproducció d'àudio.
- Descripció de les circumstàncies del lloc d'ús i la seva disposició.

- Descripció de l'usuari: Nom complet. Tipus d'usuari: tècnic, persona amb limitació sensorial de quin tipus i grau. Relació amb l'equip que condueix les proves.
- És usuari d'audiodescripció? Amb quina freqüència? Des de quan fa ús de l'**audiodescripció** en televisió. Quines diferències i avantatges veu en la forma de lliurament que s'està provant?

Q a/1- Prova sobre audiodescripció. Cas d'utilització amb un ser top box i un televisor

- Enumeri els inconvenients d'accés que ha trobat en el muntatge corresponent a aquesta prova.
- Posada en marxa del televisor i del set-top-box.
- Accés als canals.
- Què comporta més inconvenients per a l'ús d'aquest servei d'accés
- Observacions sobre possibilitats de millora de la forma d'operació del sistema
- Comentaris sobre la qualitat i utilitat del servei provat. Li sembla d'una utilitat pràctica?
- Observacions
- Conclusions

Q a/2- Cas d'utilització del servei a través de un PC

-   Enumeri els inconvenients d'accés que ha trobat en el muntatge corresponent a aquesta prova.
-   Posada en marxa del PC i del programa de visionat.
-   Problemes d'accés als canals.
-   Què comporta més inconvenients per a l'ús d'aquest servei d'accés
-   Observacions sobre possibilitats de millora de la forma d'operació del sistema
-   Comentaris sobre la qualitat i utilitat del servei provat. Li sembla d'una utilitat pràctica?
-   Observacions
-   Conclusions

Q b/0- Prova sobre audiodescripció en Vídeos sota Demanda (VoD)

Nom d'aquesta prova.

-   Descripció del muntatge tècnic (una per a cada la sèrie de proves).
-   Descripció del sistema de reproducció d'àudio.
-   Descripció de les circumstàncies del lloc de ús i la seva disposició.

-   Descripció de l'usuari: Nom complet. Tipus d'usuari: tècnic, persona amb limitació sensorial de quin tipus i grau. Relació amb l'equip que condueix les proves.
-   És usuari d'**audiodescripció**? Amb quina freqüència? Des de quan fa ús de l'**audiodescripció** en televisió. Quines diferències i avantatges veu en la forma de lliurament que s'està provant?

Q b/1- Prova sobre audiodescripció en Vídeos sota Demanda. Cas d'utilització amb un ser top box i un televisor

-   Enumeri els inconvenients d'accés que ha trobat en el muntatge corresponent a aquesta prova.
-   Posada en marxa del televisor i del set-top-box.
-   Accés als canals.
-   Què comporta més inconvenients per a l'ús d'aquest servei d'accés
-   Observacions sobre possibilitats de millora de la forma d'operació del sistema
-   Comentaris sobre la qualitat i utilitat del servei provat. Li sembla d'una utilitat d'accessibilitat pràctica?
-   Observacions
-   Conclusions

Q b/2- Prova sobre audiodescripció en Vídeos sota Demanda. Cas d'utilització del servei a través de un PC

- Enumeri els inconvenients d'accés que ha trobat en el muntatge corresponent a aquesta prova.
- Posada en marxa del PC i del programa de visionat.
- Problemes d'accés als canals.
- Què comporta més inconvenients per a l'ús d'aquest servei d'accés
- Observacions sobre possibilitats de millora de la forma d'operació del sistema
- Comentaris sobre la qualitat i utilitat del servei provat. Li sembla d'una utilitat pràctica?
- Observacions
- Conclusions

Q c- Prova de servei d'audiodescripció en vídeos en planes web (AD on the web)

- Nom d'aquesta prova.
- Descripció del muntatge tècnic.
- Descripció del sistema de reproducció d'àudio.
- Descripció de les circumstàncies del lloc d'ús i la seva disposició.

- Descripció de l'usuari: Nom complet. Tipus d'usuari: tècnic, persona amb limitació sensorial de quin tipus i grau. Relació amb l'equip que condueix les proves.
- És usuari de audiodescripció? Amb quina freqüència? Des de quan fa ús de l'audiodescripció en televisió. Quines diferències i avantatges veu en la forma de lliurament que s'està provant?

- Enumeri els inconvenients d'accés que ha trobat en el muntatge corresponent a aquesta prova.
- Posada en marxa del PC i del navegador web.
- Problemes d'accés a la plana i a cada un dels vídeos canals.
- Accés a la pista de audiodescripció
- Què comporta més inconvenients per a l'ús d'aquest servei d'accés
- Observacions sobre possibilitats de millora de la forma d'operació del sistema
- Comentaris sobre la qualitat i utilitat del servei provat. Li sembla d'una utilitat pràctica?
- Observacions
- Conclusions

10.7 Questionnaire concerning Reduced Playback Speed

Testzeit:

pro Beitrag: maximal. 10 Minuten

Gesamtzeit ca. 3 x 10 Minuten

Ausgangssituation:

3 verschiedene und sehr anspruchsvolle Beiträge A, B und C werden mit jeweils einer Minute Dauer vorgespielt. Die Versuchspersonen tragen in einer einfachen Skala den Grad der Verständlichkeit ein, mit der sie dem Beitrag folgen können. Es wird eine gerade Linie erwartet, die von „schlecht Verständlich" bis zu „gut verständlich, aber zu langsam" verläuft.

Auswertung:

Zur Auswertung muss man nur die Zuordnung bei „gut verständlich" zur angebotenen Geschwindigkeit finden. Es wird erwartet, dass dieses Maximum der Verständlichkeit bei jungen und alten Versuchpersonen bei ca. 0,9 bis 0,75 liegt. Bei den anderen wird erwartet, dass sie den Original-Beitrag als gut verständlich empfinden. Bei der Zusammensetzung der Probanden sollte man also von vornherein die jungen und alten eher vorziehen, um eine Aussage zu bekommen. Auch für ältere Menschen mit oder ohne Hörhilfen könnte das Verfahren geeignet sein und sie sollten auch in den Test mit einbezogen werden.

10.7 Questionnaire concerning Reduced Playback Speed

Möglicher Fragebogen zu „Reduced Playback Speed" :

Dieser Verständlichkeitstest biete Ihnen immer den gleichen Beitrag von ca. 1 Minute Dauer in 4 Stufen mit reduzierter Geschwindigkeit an. Sie sollen bei jedem Durchgang angeben, ob sie ihn besser verstehen oder ob er sie zu langweilen beginnt. Bitte machen Sie nur **1 Kreuz in jede Zeile!**

(Am Anfang wird der Beitrag in ursprünglicher Geschwindigkeit wiedergegeben)

Beitrag A

	Schlecht verständlich	Mittel verständlich	Gut verständlich	Gut verständlich, aber zu langsam
Beitrag A1 Original				
Beitrag A2 0,9x				
Beitrag A3 0,75x				
Beitrag A4 0,5x				
Evtl. langsamer				

Beitrag B

	Schlecht verständlich	Mittel verständlich	Gut verständlich	Gut verständlich, aber zu langsam
Beitrag B1 Original				
Beitrag B2 0,9x				
Beitrag B3 0,75x				
Beitrag B4 0,5x				
Evtl. langsamer				

Beitrag C

	Schlecht verständlich	Mittel verständlich	Gut verständlich	Gut verständlich, aber zu langsam
Beitrag C1 Original				
Beitrag C2 0,9x				
Beitrag C3 0,75x				
Beitrag C4 0,5x				
Evtl. langsamer				