

**ITU-EBU Joint Workshop on Accessibility to
Broadcasting and IPTV ACCESS for ALL
(In cooperation with the EU project DTV4All)
Geneva, 23 – 24 November 2010**

Barrierfree Digital Television: DTV4All

**The user opinion on options for
barrierfree digital TV services**

**Bettina Heidkamp-Tchegloff
rbb Innovation Projects**

Rundfunk Berlin-Brandenburg

- Public service broadcaster for Berlin/Brandenburg
 - Local catchment area: 30,000 KM2
 - Population: 6 million
- Member of ARD (Europe's largest broadcasting network)
- One TV station, six radio channels, wide range of multimedia services online, videotext & mobile (rbb Text, ARD Text), HbbTV (ARD Playout Center)
- 21 European projects successfully concluded since 1997 (FP7-ICT, eContentPlus, ICT-PSP, ESA Artes)

rbb in DTV4All

- **Fieldtest of DVB-Subtitles:**
 - Involving 52 hearing impaired/deaf users over nine months
- **Four lab tests of novel services:**
 - Among them:
 - Barrierfree HbbTV-Text
 - Signer on Demand
 - Demo of both services at workshop
 - 10 testers each

Subtitles as you know them → Teletext!



Subtitles as they can look like today → DVB-Subtitles



What are DVB-Subtitles?

- For DVB-Subtitles you need a digital TV-set or set top box (receiver): You access them by one click on remote control
- DVB-subtitles are easier to read: new design options: different fonts in different sizes, different background style
- They can be produced by simply converting teletext subtitles
- German Situation: DVB-Subtitles on ZDF since 10/2007, ARTE HD since 2009

Test of DVB-T-Subtitles at rbb

- **Aim:** Find best subtitle design with users
- **Duration:** February to October 2009
- DVB-Subtitles are **broadcast** in Berlin region via Digital Terrestrial Television (DTV)
- **User group:** 52 hearing impaired/deaf testers equipped with set top box
- Close cooperation with **impairment associations**
- **Weekly validation** of changing DVB-subtitle design

Test DVB-Subtitles: What was tested?

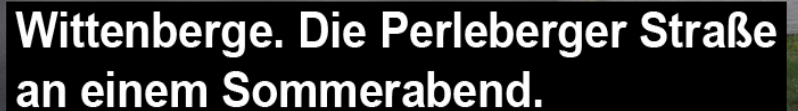
- Five different **fonts**; each in three different **sizes**
- Plus variations with **different background styles**.
- Some examples:

Outline /
shadow:

A screenshot of a DVB subtitle with a dark background and white text. The text is "Wittenberge. Die Perleberger Straße an einem Sommerabend." and has a thick black outline and a drop shadow.

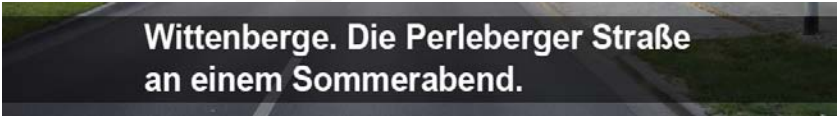
Wittenberge. Die Perleberger Straße
an einem Sommerabend.

Black box:

A screenshot of a DVB subtitle with a solid black rectangular background. The text is "Wittenberge. Die Perleberger Straße an einem Sommerabend." in white.

Wittenberge. Die Perleberger Straße
an einem Sommerabend.

Transparent
Band:

A screenshot of a DVB subtitle with a semi-transparent dark band background. The text is "Wittenberge. Die Perleberger Straße an einem Sommerabend." in white.

Wittenberge. Die Perleberger Straße
an einem Sommerabend.

Test of DVB-Subtitles: Evaluation

- **Questionnaire:** Each week testers rated the design of the week:
 1. Each single design element (font, size, background style)
 2. The subtitle design of the week on the whole
- **Priority:** We looked for the solutions that found the broadest acceptance

Best rated design



Medium size Tiresias Screenfont in normal box with
transparency 80

Impact

- Test Report was provided to nationwide ARD Network
- ARD plans to introduce DVB-subtitles nationwide
- **rbb** recommendations from test are to be adopted for this!

Plus:

- **rbb** will not switch off the DVB-subtitle test operation in the region but will introduce regular operation from 2011

Test: Barrierfree HbbTV-Text

- Background is **HbbTV= Hybrid broadcast broadband TV**: TV and internet are combined: new services delivered to the TV over the Internet
- **Aim**: To make a new, nationwide HbbTV Text Service more accessible for sight impaired people (ARDText)
- A prototype was developed: Have a look!

Screenshot Zoom Functionality



Screenshot Zoom Functionality / different Colour Variant

ARD Text

Seite **401**

Start	100
Nachrichten	112
Sport	200
Wetter	170
Wirtschaft	700
Kultur	400
Ratgeber	530
Programm	300
Inhalt A-Z	102
Hilfe	
Einstellungen	

Nachrichten Kultur 09.09.2010, 10:40 Das Erste

Deutscher Buchpreis: Sechs Bewerber

Die Jury hat sich entschieden: Die sechs Finalisten für den Deutschen Buchpreis 2010 stehen fest. Es sind Jan Faktor, Thomas Lehr, Melinda Nadj Abonji, Doron Rabinovici, Peter Wawerzinek und Judith Zander.

Man sei sich nicht immer einig gewesen, sagte Jurysprecherin Julia Encke von der Frankfurter Allgemeinen. Die Gemeinsamkeit

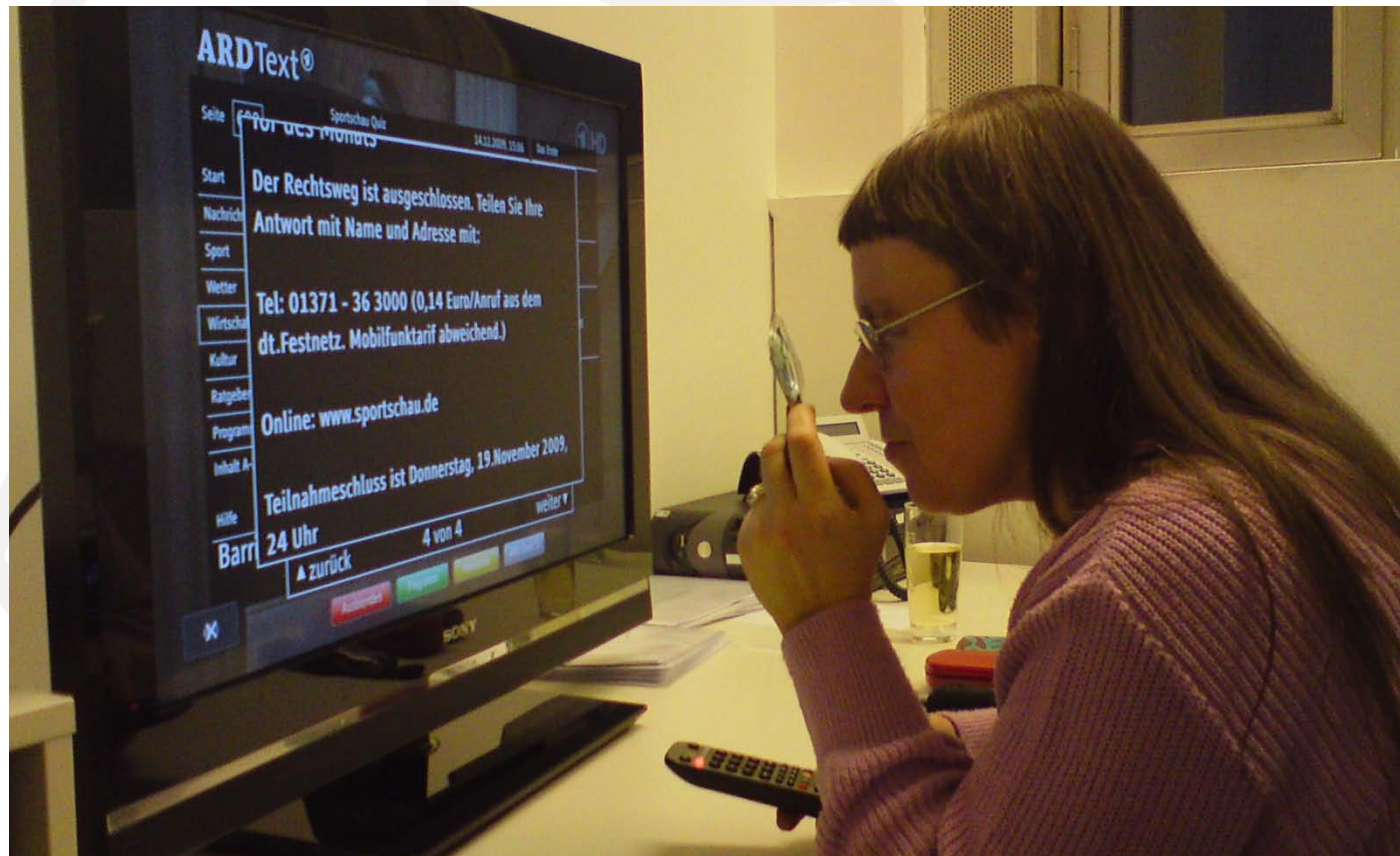
▲ vorige Meldung weiter ▼

Startleiste 0 Ausblenden Programm Mediathek Einstellungen

Test Barrierfree HbbTV-Text

- What was tested?
- Prototype: DTV4All version of ARD Text with accessibility features
- **User group:** Nine sight-impaired users. Representative range of eye diseases and resulting disabilities
- Users performed **tasks** and made free **comments**
- Very positive feedback from the testers!

One of our users during the test



Test HbbTV Text – Results and outlook

- **ARD Text now on air with improved accessibility!**
 - **Zoom / Magnifier** and **Colour variations** adopted: more colour variants added
 - Enlarged field for entering page numbers
 - New full screen mode – better contrast
 - Better Colour buttons : Solid colours, more contrast
- **Outlook:** Provide recommendations to ARD