

PUBLISHABLE SUMMARY



Digital Television for All

What is DTV4All?

DTV4All is a project funded by the European Commission to facilitate the provision of access services on digital television across the European Union.

What are access services?

People who are hard of hearing or deaf need subtitles or deaf signing to be provided with television programmes if they are to fully appreciate its dialogue. People who are partially sighted or blind need audio description provided with a television programme if they are to fully appreciate the context of what they hear. Such services enable their users to access the storyline of a television programme so are known as access services.

The ethos of DTV4All

There are two basic scenarios for the provision of access services. In the first, those with impairments are expected to buy a specialised digital television set-top box that can support the access services they want or have it provided by the public health system. In the second, society takes collective responsibility for inclusivity and ensures that set-top-boxes targeted at the general user can support core access services, especially given that certain improvements made for vulnerable groups can be beneficial to all users. *DTV4All promotes inclusivity.*

Why has DTV4All been funded?

The switch-off of analogue television in Europe by 2012 represents both a challenge and an opportunity for access services. It represents a challenge for two very different reasons. Firstly, many people who have had no problems accessing analogue television will experience some difficulty in accessing digital television. The extent of this issue is such that approximately 15% of Europeans have difficulties in accessing digital television for reasons such as: Hearing impairments; Dyslexia; Visual impairments; Complexity of setting up a digital receiver or set-top box; Remote controls they find difficult to use; Electronic Programme Guides (especially when there are over one hundred channels to choose from)

Secondly, the analogue switch-off will introduce widespread improvements to the quality of existing digital television programmes, collectively known as second generation digital television, such as high definition television (HDTV). As the amount of information that can be sent by a digital television transmitter is limited this poses a challenge to some existing access services.

For example, the amount of information in a high definition television programme is significantly higher than the amount of information in the same programme delivered in standard definition. This means that there will be pressure to reduce the amount of transmitted information devoted to access services due to the demand for programmes to be delivered in high definition.

An example of a service likely to come under such pressure is the provision of a virtual channel which allows a signer to be shown more prominently than in conventional portrayals of a signer on a screen illustrated in Figure 1 below. Such a service is valued by its users because the facial expressions of the signer can be clearly seen and these are an important part of the communication. However, showing the signer in this way requires more information to be sent than conventional portrayals.



Figure 1: Screenshot of a signing service provided on a virtual channel

The opportunities to improve access to digital television for those with physical, mental or age-related impairments that arise due to the analogue switch-off take two forms, opportunities to extend the provision of existing mature access services to European countries that do not currently provide them, and opportunities to provide new kinds of access services known as emerging access services. To ensure the challenge is addressed and the opportunity exploited, DTV4All takes action on two fronts:

- *Ensuring the widespread adoption of mature access services for first generation digital television*
- *Identifying, assessing and promoting emerging access services for second generation digital television*

The most valuable contribution DTV4All can make is to identify the enablers that will allow a core set of access services to be offered in all EU member countries in the near future.

Objectives of DTV4All

1. Offer and evaluate mature subtitling, audio description, audio subtitling and signing services in a minimum of four territories within the European Union for at least 12 months.
2. Identify improvements to existing access services and ways of addressing the key technical, organisational and legal obstacles to the sustainable take-up of these services in the timeframe 2008-2010 throughout Europe.
3. Identify and prioritise key emerging access services, and the devices and platforms needed to support them for the period 2010-2012 in terms of technological feasibility, perceived value to their intended users and business model viability.
4. Make recommendations regarding mature and emerging access services to bodies representing stakeholders in the access service value chain on the basis of which these bodies can take appropriate action in relevant standardisation bodies.

Work performed and results achieved since the beginning of the project

The main work of the DTV4All project was to pilot mature access services on a full scale in four territories of the European Union. The main work of the project during its 33 months duration is reported in its deliverables, all of which are public and available for download from the project website given below.

D1.1 Detailed Work Plan for the full-scale Deployment of Mature Access Services describes the rationale for doing a pilot of mature access services and clarifies the scope of digital television access needed for the pilot. It gives a detailed breakdown of the kinds of information the pilot of mature access services is expected to produce. It provides a work plan and a detailed timetable for:

- Provision of details of the target audiences and their needs, the content genre of the access services that will be provided and some quantification of the services themselves
- Identification of which access services will be produced and delivered to which devices
- Explanation of how agreement will be reached about the access services to be offered and funded

D2.1 Technical Plan of Mature Pilot Services describes the technical plan for the pilot. As the mature access services are already deployed in the target regions, the objective of the mature access services pilots is to accelerate the roll-out of mature access services by evaluating existing access services, and through the provision of implementation guidelines produced as a result of the experience gained in running the pilots. These guidelines will be targeted at countries where as yet no Digital Video Broadcasting – Terrestrial (DVB-T) services are deployed and in countries where DVB-T services are deployed which have spare spectrum potentially available for the delivery of access services. The evaluation methodology underpinning the evaluation of the mature pilot services is described in detail in D2.2 Evaluation Methodology which specifies the data required to be generated not only in connection with end-user evaluations but also from interviews and other contacts with stakeholders in the supply chain for each and every mature access service in the countries participating in the Pilot. D2.3 Interim Report on Pilot Services and D2.4 Interim Report on Pilot Services (2): report the first six months' and first twelve months work, respectively, on the planning and implementation of the Pilot of Mature Digital Television Access Services. They give the preliminary findings of the Pilot and some indication of how these influenced subsequent work. D2.5 Final Report on Pilot Services Part 1 presents the full and final results and conclusions of the pilots of mature access services undertaken by the DTV4All project. D2.5 part 2, which can be read as a supplement to D2.5 part 1, includes the final results of the eye-tracking work that was conducted by the Universities Sub-titling team which provides supporting evidence for conclusions presented in D2.5 part 1. The studies included in D2.5 part 2 represent a rich and varied collection of research both in terms of their methods, findings and presentation. They also address important lacunae in our understanding of the workings of mature access services. In terms of the issues identified by the project Pilots of mature access services carried out in the DTV4All project, 16 specific recommendations are made in D2.6 Recommendations on the Effectiveness and Efficiency of Existing Services Improvements. This deliverable also makes 5 generic recommendations related to the provision of mature access services.

D3.1 A Shortlist of Emerging Access Services outlines the tasks that have to be completed so that the detailed scope of the pilots of emerging access services that the project will undertake

can be determined. D3.2 Implementation and Test Plan describes how the project will interface with the latest technical developments to make access services more widely available on digital television while ensuring the optimal usability of these services. This document establishes:

- How the emerging services selected for implementation will be implemented
- When dedicated tests of the implemented services will be performed and the target groups that will do the evaluation of the services
- How the results of the tests will be dealt with and the ways in which the project team will respond to the results
- The ways in which the test results will be fed back into the process of development of a “Demonstrator”

D3.3 First Phase Emerging Access Service Demonstrator: describes an implementation of open video signing using a hybrid broadcast/broadband digital TV solution that was demonstrated by the project at the European Ministerial e-Inclusion Conference 2008 in Vienna. It allows users to change the position of the signer on the TV screen and the dimensions of the signer. D3.4 Interim Report on Expert User Tests 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). It elaborates the technological approach to realising the phase I demonstrators as well as their respective test set-ups and methodological approaches. The DTV4All project “Second phase Emerging Access Service Demonstrators” encompass demonstrators for Video Signing (Signer on a TV screen and/or mobile phone), Clean Audio delivered on an additional sound channel, Reduced playback speed with the help of hard disk storage, Enhanced Audio Description via the Web, and Enhanced Text Services provided via the Web. D3.5 2nd Phase Emerging Access Service Demonstrator (final) elaborates the technological approach to realising each of these demonstrators as well as the respective test set-ups and methodological approaches. Test results and evaluation of the demonstrators are documented in this deliverable. D3.6 Final Report on Expert User Tests of Emerging Access Services covers the laboratory tests of the remaining two project demonstrators. One of the demonstrators deals with enhanced Audio Description services.

The other demonstrator is a signing solution for so called hybrid devices. This is an HbbTV-based-solution where the user can access a video with a built-in signing video on demand via the IP-connection of the hybrid device. Unfortunately, new hybrid receivers currently on the market are not able to decode two parallel video streams which is an important pre-requisite for a truly hybrid broadcast-broadband solution where only the signing video is broadcast via the IP channel and then combined with the broadcast video on the actual device. However, the lab test documented in D3.6 produced important parameters for future hybrid solutions. An earlier signing solution for hybrid devices is described in D3.5. This shows how a signer video can be transmitted synchronously with the broadcast of the programme being signed via a separate broadband Internet connection.

.D4.1 Cooperation with Standardisation bodies: describes how the project will interface with standardisation bodies because standardisation is required for interoperability and usability of access services on digital television. It therefore impacts on product and service design. This document establishes: The prerequisites for ubiquitous access services in Europe; The way standards contribute throughout the value chain to realising ubiquitous access services; Scenarios the project team foresee for promoting e-inclusiveness through the medium of digital television.

The Institut für Rundfunktechnik (IRT) supported by the other project partners presented early results of the DTV4All project, in the English language, at the International Broadcasting Convention (IBC) in Amsterdam from September 11-15, 2009 where DTV4All was partner of the European Broadcasting Union (EBU). D4.3 IBC/IFA Presentation reports on this activity together with the presentation of early results of the project by RBB at IFA, which is one of the world's largest consumer electronics trade shows, in the German language, in Berlin 3-8 September 2009. D4.4 Final dissemination plan describes the processes put in place by DTV4All for providing information on the quality, relevance and effectiveness of its results to broadcasters, the creators of access service content, consumer electronics manufacturers, users, relevant regulatory bodies, politicians and the European Commission. These processes take effect as the results of the project become available. An initial draft version of this plan is provided in D4.2 Preliminary Dissemination Plan. Just as in 2009, in 2010 DTV4All participated in IBC and IFA. DTV4All was present at both events with demonstrators. Both trade fairs were consulted by high ranking politicians and by a wide audience participating in the numerous demonstrations. D4.5 IBC/IFA Presentation (2) reports on the DTV4All participation at IBC and IFA. D4.6 Descriptions of the Mature Access Services and Guidelines for their Implementation throughout Europe takes the form of report entitled "Making Television Accessible" by P. Looms of DR that was produced jointly for the DTV4All project and the ITU. This report addresses a number of issues that look at the strategic implications of making audiovisual content accessible to persons with disabilities. D4.7 Recommendations on Emerging Access Services explores three scenarios for the future of digital television focussing on universal design, e-inclusion, and making sure that media are accessible to all. The DTV4All project final workshop on access services took the form of an International Telecommunications Union (ITU)-European Broadcasting Union (EBU) Joint Workshop on Accessibility to Broadcasting and IPTV ACCESS for ALL, Geneva, Switzerland, 23 – 24 November 2010 in cooperation with the EU project DTV4All. D4.8 Final Workshop on Access Services at the EBU [ITU-EBU joint workshop: Nov 2010] and the workshop slides that accompany it provide a permanent record of this workshop.

The report D5.2 DTV4All Workshop [at European Parliament: Oct 2010 and the workshop slides that accompany it provide a permanent record of the DTV4All Workshop on Barrier Free Television at European Parliament on 28 October 2010.

Consortium

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Website: <http://www.psp-dtv4all.org/>