

# Audio description user requirements

## Summary

A set of requirements have been established for services that provide Audio Description. These have been generated from two main sources of research: the ITC's AUDETEL project, published 28 February 1993, and a trial of the UK Digital Terrestrial system in 40 households.

## Glossary

AD      Audio Description      A service provided primarily for the benefit of visually impaired and blind users who would otherwise be limited in their access to television programmes.

## User requirements

1.1	Ability to mix the AD with the main programme sound output	Essential
1.2	User control of the AD mix	Essential
1.3	Separate headphones output	Essential
1.4	Audible identification of programmes carrying the audio description service	Essential
1.5	One-touch access to AD	Optional
1.6	Provision for wireless headphones by integrating the transmitter into the receiver unit	Optional
1.7	Provision of a second control handset, providing access specifically to the Audio Description features	Optional
2.1	Speaking user interface	Optional
3.1	Ability to send the AD to a video recorder, or other recording device	Essential
3.2	Ability to play back programmes with the option of AD at the time of playback.	Essential for PVRs

## Details and rationale

### 1.1 Ability to mix the AD with the main programme sound output

Some users prefer to listen to the Audio Description through the main speakers that they usually use to hear the programme sound, hence it is an 'open' service in their environment. This should be the primary goal of any equipment attempting to implement AD reception.

### 1.2 User control of the Audio Description mix

Whilst there will be a degree of automation controlling the mix between the original soundtrack and the description, the user must be able to adjust the relative levels of the two components. Listeners have different levels of acuity, and describers have different timbres of voice, the effect of which cannot be generalised in a way that is suitable for all. Adjustment may therefore need to be made by the user on a programme by programme basis. Listeners also have differing preferences, which can change from programme to programme.

### 1.3 Separate headphones output

The system should include a headphone output socket that can be set to permanently offer the AD version of the television service. In addition, the main output sound (on speakers) should be able to offer the television sound with or without the AD. This facilitates a mixed audience where not everyone wishes to use the service.

The headphones output volume should be adjustable independently of the main speakers output, so that a listener who has hearing difficulties has the ability to increase their volume to the required level without affecting the remaining audience.

### 1.4 Audible identification of programmes carrying the audio description service

The user should be able to identify, by audible means, whether or not the current television programme is carrying an AD service. This may be a simple beep - for example, two short, high beeps for yes and one long, low beep for no - or by means of speech if that facility is included. This should not be output to any video recorder attached to the unit. In the case of switching on and off the AD service coming through the main speakers, the state of this switch should also be announced audibly. This is so that those wishing to access the service without the use of headphones can still enjoy the full functionality of the system.

It should also be possible to set up the system to alert the user when the service starts and stops. This would be done by means of the same sounds as used for the above.

### 1.5 One-touch access to Audio Description

Whilst the headphone output should be able to give AD permanently, the main speakers option should be switchable by means of a one-touch operation. This is to enable the service to be readily accessible for temporary use, and for use by those less technically agile.

### 1.6 Provision for wireless headphones by integrating the transmitter into the receiver unit

Cables running across the floor are always hazardous, but particularly when there are people around who could easily fail to notice them. Integrating a wireless transmitter (radio or infra-red) into the receiver itself reduces the number of additional pieces of equipment required to provide the service to headphone users. Optimally, rechargeable

headphones will be used, but it is preferable to have the charging-station at close hand to the armchair rather than on top of the television. This requirement would make that possible.

### 1.7 Provision of a second control handset, providing access specifically to the AD functions

It may be appropriate to provide an additional control handset for the AD user, with a set of controls specifically for the service. The overall volume control, AD level control, mute button and service identification button would all relate purely to the audio issued to the headphone user. They could then enjoy independent access to their own service.

### 2.1 Speaking user interface

Improving access to the programme itself is of limited use unless access can also be made to the information of what the programme is, which channel it is on and finding the programme in the first place. The other features that add value to digital television should therefore also be spoken to the user.

Whilst these spoken elements should be also available on the main speakers (as an option), they should not be sent to a video recorder attached to any SCART output of the box.

This has another advantage: if a user wishes to listen to a radio channel using a sound system, but does not wish to turn on the television purely to select the required station.

### 3.1 Ability to send the Audio Description to a video recorder, or other recording device

There should be a similar level of access between live programmes and those that have been recorded by the user. It is therefore essential that any programmes the user may wish to record, including unattended recordings, must be made with the AD, if it has been selected.

### 3.2 Ability to play back programmes with the option of Audio Description at the time of playback.

Using a digital stream recorder, such as a PVR, it is possible to maintain the AD as an independent stream. In this way, the user is guaranteed the option of whether or not to include the AD in the playback of the programme. If the technology being used is capable of this feature, then it must be provided.

## Annex: sources of data used

### AUDETTEL research extracts

#### AUDETTEL Volume I part I:

##### 4. Control of the System:

It seems reasonable to suppose that the resultant audio, either in a set top adapter system or from the internal TV speaker, will consist of a mix between the existing TV audio (mono or stereo) and the audio description source. The degree of mixing should essentially be automatic (controlled by a data signal associated with the audio description). It should have the ability to be overridden (at least to some degree) by the customer who may choose to balance the mix differently. An alternative, simpler, and therefore cheaper solution might involve automatic fading of the main sound to a pre-determined level.

The overall audio output must be controlled (volume control). The audio mixing and volume control would be implemented via the infra-red remote control either on the TV's remote handset (in the case of an audio description inset), or, on a separate simplified handset in the case of a set-top adapter or video recorder.

The addition of simple speech synthesiser chips could allow for the blind viewer to interact easily with the adapter unit. For example, each control button could 'speak' its function when pressed, and the unit could 'say' "Tuning into the new station, please wait...". Such circuitry would add to the cost of the adapter, but the additional cost might be considered worthwhile by the specialist market that such an adapter is likely to appeal to.

##### 5. Recording the audio description signal - implementation:

Assuming that there is no audio description decoder inside the video recorder, we would suggest that programmes are recorded by supplying either channel 36 with video and mixed audio (TV audio plus sound description) to the video recorder in the case of a set top box with UHF modulator, or more likely, that the video and mixed audio is supplied into the AV socket of the video recorder (this is usually a scart socket in modern recorders).

There appear to be a number of options regarding the signal supplied to the scart socket. In the case of a monophonic video recorder, the TV audio would be mixed to be monophonic (where the TV normal sound is Zweiton or NICAM) and a sound description audio mix added. The resultant signal would be recorded as the combined sound by the video recorder.

Similarly, in the case of a stereo TV sound signal the sound description would be mixed equally on the left and right channels and again recorded by a stereo video recorder.

There is, however, a third possibility that can make use of the ability of a limited number of stereo recorders to record a "dubbing track" on the existing monophonic audio track. By supplying the TV stereosound signals into the video recorder's scart socket as normal, but applying the audio description sound to the dubbing input of the video recorder (often through the microphone jackplug), it would be possible to record effectively three audio tracks simultaneously. This means that on playback one can select (by a switch on the video recorder) whether or not the audio description is added to the stereo tracks.

This facility would mean that a programme could be recorded and listened to by members of the family who do not need the audio description without precluding the playback with the audio description to those who are visually impaired.

#### Feedback from Freeview AD triallists

- The new kit is very good, very flexible, but it is a pity that I can't get into the digital radio channels because the system is driven from a totally visual menu.
- In the second part some parts of the AD ran over the dialogue and made it very difficult to understand, although the fact that I was able to adjust the AD volume did help.
- Being able to adjust the volume of the AD makes everything easier - I could follow the programme through to the end.
- It is very good to be able to adjust the level of the audio description by use of the remote control.
- I can now record AD programs using the timer!!!!
- Previously I could only record using the SIMULCAST feature and taking the audio from the back of the mixer box to the audio I/P of VTR. Timers don't work on SIMULCAST.

#### References

The AUDETEL Project, FINAL REPORT, 1994, ITC et al  
Audio Description: what it is and how it works, 2002, N. E. Tanton and T. Ware

Clive Miller (RNIB) / Nick Tanton (BBC)  
13 June 2003