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Loud and clear

Not only can assistive listening provide help for the hard of hearing, it can also enhance experience and learning opportunities for those without hearing difficulties. **Simon Duff** explores the market

In Europe about 71 million people aged 18 to 80 have a hearing loss of greater than 25dB, the definition of hearing impairment recognised by the World Health Organization. In the Netherlands alone, 10% of the population is hearing impaired, with 75,000 hearing aids supplied annually. Ask users about how well society is geared towards meeting their needs and it quickly becomes apparent that confidence in the technology aimed at helping them is fairly low.

The UK's Disability Discrimination Act (DDA) 2005 states that shops and other everyday service providers must make "reasonable adjustments" to accommodate disabled customers. However, a recent report on induction loops carried out by the UK's Royal National Institute for Deaf People (RNID), working alongside a major transport provider, found that only 3% of ticket purchase and assistance windows gave an acceptable experience, and 20% did not work.

Legislation aimed at helping the hard of hearing varies across Europe. Julian Pieters, managing director of induction-loop manufacturer Ampetronic, points out the discrepancies he sees. "There is a principle in European legislation of reasonable adjustment. This means that there is some interpretation to be had about what is reasonable, and it doesn't mandate loop systems. It can say, for example, that in an auditorium for more than 100 people, they must provide coverage for 80% of them. Whereas in the UK you must provide accessibility wherever it's reasonable to do so, which could be nowhere."

Sennheiser's HDE 2020-D Tour Guide digital radio solution is just one of many new products coming to the market

Personal amplifiers

For people who require a volume increase to achieve the same level of understanding as people with normal hearing, assisted listening systems (ALS) are part of their solution. In essence these are amplifiers that bring sound directly into the ear and have at least three components: a microphone, a transmission technology, and a device for receiving the signal and bringing the sound to the ear. They aim to separate the sounds, particularly speech, from background noise.

However, disability access is only one part of the ALS market. In the past, little consideration was given to offering assistance to those without a prescribed hearing aid who simply wanted an enhanced experience. However, any environment in which supplementary audio is required – such as a factory tour, a museum, a theatre or a school – can be a candidate for ALS. In countries such as Spain, however, access legislation is written in such a way as to offer equal opportunity to both the hard of hearing and those without supplementary listening requirements.

Key points

- **71 million adults** in Europe aged between 18 and 80 have a hearing loss greater than 25dB, the World Health Organization definition of hearing impairment
- **Assisted listening systems** are based on induction loops, FM radio or infrared. Induction loop installation is easy to get wrong: manufacturers offer integrator training and approvals
- **The market continues**, for the most part, to be strong, with new trends emerging such as audio description services in cinema and live-theatre markets
- **Studies show** that students learn 30% more when classroom amplification systems are used

Trio of technologies

Assisted listening devices (ALDs) are based on three technologies: induction loops, radio and infrared, each of which has its own merits. The main advantage of an induction loop is that a hearing aid user has no need for additional receiving equipment. System owners do not have to worry about headsets or charging batteries. Loop systems are not suitable for very large seating areas such as stadiums or when multiple simultaneous channels are needed.

Ampetronic has the broadest range of induction loop solutions on the market, with everything from large-area coverage systems to niche applications. Pieters says: "Loop systems can be tricky, although they're not complex, and it is easy to get them wrong. It's not just a question of selecting an amplifier and speakers and slapping them in. You have to be conscious of the environment you're installing the system into. For example, if there's a large amount of metal in a structure, this will affect the loop. There are solutions to everything, but you can fall into traps and it's necessary to know what you're doing. The emphasis for us is to make sure that the specification is right, so integrators are forced to do the right job."

FM radio-based systems are commonly used in educational settings, guided tours and houses of worship, offering mobility and flexibility when used with body-worn transmitters. They can be cost effective, especially in large-scale systems. The downside is that FM signals are not generally constrained by walls or buildings, so they are unsuitable for applications that require privacy, such as corporate or judicial work. FM can also be susceptible to outside interference from other users of the radio spectrum, such as FM antennas and mobile phones.

FM and infrared manufacturer Williams Sound has been helping people hear for more than 33 years. A high-profile use of the company's technology came recently at the InfoComm09 Technologies for Worship Pavilion. Attendees learned how to increase the outreach of their churches by incorporating the latest in audio/video, lighting and display technology. Williams Sound played a key role in this education process by providing an array of FM transmitters and receivers designed to overcome listening difficulties during the audio workshops in the pavilion.

'The market for large-area hearing assistance is relatively new'

Paul Ingebrigtsen, Williams Sound

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booth can be difficult. The same can be said for those with able hearing, as background noise can serve as a constant distraction. Swiss PA/VA and intercom manufacturer Ateïs makes a counter intercom range called the Magellan that provides hearing assistance both for open desk environments requiring a loop install and for through-glass applications such as ticket windows. Used throughout the Swiss SNCF station network and in ski-lift pass environments, it features DSP technologies to suppress feedback and reduce unwanted background noise. An installer using a laptop, which is then locked so that the end user cannot tamper with it, can set up the system.

However, Neil Voce, sales director at Ateïs UK, comments: "The peak of sales of this type of product was, as with all DDA-compliance installs, a couple of years ago."

What then of the future? It's clear that ALS has its part to play in making life easier for everyone, not only hearing aid users, but also those with a slight hearing loss. A lot of these people are concerned about being perceived as disabled. Consequently they don't wear hearing aids, but struggle through. Because of the attention now being paid to ALS it is these intermediate people who will possibly benefit most from the technology.

CASE STUDY

Induction loops are the choice of kings

Kings Place, one of London's newest high-profile office and leisure developments, offers high-quality public arts facilities, including a concert hall, recital rooms, galleries, bars, restaurants and event spaces.

Also acting as the headquarters for two orchestras – the London Sinfonietta and the Orchestra of the Age of Enlightenment – the Dixon Jones-designed building has been developed with acoustic excellence at its heart. Three Ampetronic induction loop systems ensure that as many people as possible can appreciate the programme of events provided by the resident Kings Place Music Foundation.

Installed by Edinburgh-based Northern Light, two Ampetronic ILD1000G loop drivers power a pair

of induction loops in the main concert hall. With an all-seated capacity of 420, the hall features a narrow perimeter balcony. As a result, one loop was installed at stalls level and one on the balcony, both using copper tape and feeding from a stereo show relay microphone, routed through a Peavey Nion digital audio processor.

"It was a reasonably straightforward installation, with simple loops around the perimeter of each level and we encountered no significant problems," says Northern Light project manager Steve Myers. "Ampetronic is one of the leading manufacturers of this kind of equipment and we trust in the product. The equipment rarely needs any post-sales support because it is extremely reliable. In such a prestigious installation, reliability is as important as providing the highest quality audio to hearing-aid users."

Two further areas featuring Ampetronic systems are the Battlebridge Room and the St Pancras Room. In each space, a pair of ILD300-powered induction loops were installed by DRV Group Ltd, using Biamp Nexia processors to feed the systems.

For the more seriously hard of hearing, in a lot of European countries it is left to individual pressure groups to try to move things forward. RNID members in the UK send letters to companies that aren't providing adequate access. In the Netherlands, Nederlandse Vereniging voor Slechthorenden (NVVS) is a highly active organisation whose mission is to ensure that those with any kind of hearing impairment are able to play a part in society. Some 3,000 different pieces of equipment have been certified by the NVVS since 1986, and 250 inspections of loop installations are carried out per year by between 10 and 50 inspectors. The numbers may be small, but their actions are highly significant – and an indication as to how tough things can be for the hard of hearing. IE

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