

Assistive Listening Systems - A brief overview

What is an assistive listening system? (ALS)

Briefly, an ALS is the means by which speech clarity at the ear of those with a hearing impairment is improved, while ambient influences are reduced.

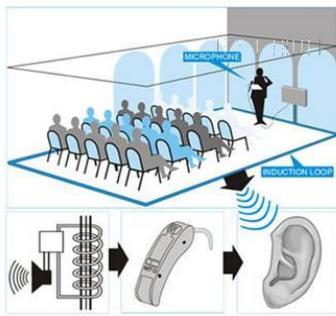
What types of ALS systems are available?

There are 3 main types;

- Induction Loop, for use with a telecoil built into hearing aids.
- Infrared System, for use with personal receivers and neck loops
- Soundfield Systems, a hearing assistance system that improves the learning and teaching experience

Induction Loops

Induction loop systems represent the major segment of assistive listening devices and have done so since the early '50s. Some 90% of all installation today is induction loop. An induction loop is an installed copper cable, usually around the perimeter of the room, powered by an amplifier. Through induction, the hearing aid picks up the audio signal through its Telecoil (T-switch). This form of assistive listening is specific to those with mild to severe hearing loss and who are using a hearing aid.



Pros

- It has direct communication with the hearing aid and does not require a specialised receiver- stethoset, chest receiver or headset to be supplied to each hearing impaired person.
- The listening area and audio characteristics can be controlled by loop design.
- Physical obstacles within the pick-up area do not influence reception.

Cons

- Loop systems are best installed in new buildings. It can be costly to retrofit in terms of having to re-construct interiors, carpets etc.
- Loop system performance can be affected by interference from mains wiring, lighting, metal framework etc.
- There will be a spillage factor outside the induction loop area. This can be minimised by loop design.

Infrared Systems (IR Systems)

An ideal solution to confidentiality. Commonly used in Law Courts, and tertiary institutions where adjacent lecture facilities require audio isolation. An IR System transmits the audio signal from a room transmitter to a personal receiver worn by the hearing impaired person. This form of assistive listening is specific to those with mild to severe hearing loss and who are using a hearing aid.



Pros

- Systems are easy and can be cost effective to retrofit into existing facilities
- Overspill is not an issue, as IR signals don't pass through walls into adjacent rooms

Cons

- There is a need to ensure line-of-sight access is available from transmitter to the user
- supply and maintenance of receiver units and sensitivity of the user must be seriously considered
- AS 1428.5 has a ratio of receiver allocation by room capacity which must be complied with

SoundField Amplification Systems (SFAS)

The sound-field system consists of an infrared wireless microphone worn by the teacher, which is transmitted via loudspeakers placed strategically around the room. The system increases the teacher's voice level and also decreases the distance from each child to the teacher's voice, which removes the problems associated with reverberation. This form of assistive listening benefits all children, and those with mild hearing loss, middle ear infections, auditory processing difficulties, non English speaking backgrounds, ADHD and learning difficulties.



A classroom with a Soundfield system installed

Pros

- Students with mild hearing loss can hear and follow instructions more easily
- Students are less distracted by outside noises
- Students can concentrate longer and get more involved in activities
- There is less noise in the classroom because students are more on-task.
- Increases the overall level of the teacher's speech, reducing voice fatigue

Cons

- System is not specific to those with severe hearing loss, although by addressing reverberation problems, hearing aids will be much more effective.