improving
public transport
through technology

Auracast™ Bluetooth Briefing Note

What is Auracast™ Bluetooth?

Auracast Bluetooth is a new wireless audio broadcasting technology that extends the capabilities of Bluetooth Low Energy (LE) Audio. It allows a single audio source to broadcast to an unlimited number of nearby Bluetooth receivers, making it ideal for public announcements, assistive listening, and social audio sharing.

How Auracast Bluetooth Works

Auracast operates using Bluetooth LE Audio, which is an evolution of traditional Bluetooth Classic Audio and is available in many devices such as smartphones and headphones already. The key innovation is its ability to transmit audio to multiple devices simultaneously via a one-to-many broadcast model. Unlike traditional Bluetooth connections that rely on pairing, Auracast allows users to tune in to available audio streams much like connecting to a Wi-Fi network.

Key Features and Benefits

- **Broadcast audio:** a single transmitter can send audio to multiple receivers without requiring direct pairing.
- **Enhanced accessibility:** ideal for assistive listening in public venues like theatres, airports, and lecture halls.
- **Social audio sharing:** users can share their audio with friends or family without requiring complex configurations.
- **Improved battery efficiency:** built on Bluetooth LE Audio, it ensures lower power consumption while maintaining high-quality audio.
- **Seamless public adoption:** businesses can use Auracast-enabled transmitters to provide real-time audio streams for customers or event attendees.
- **High-Quality sound:** uses the LC3 codec, which delivers better sound quality at lower bitrates compared to previous systems.

Potential Applications

- **Public venues:** airports, museums, and conference centres can broadcast announcements or translations.
- **Assistive listening:** hearing aid users can tune into direct audio streams in cinemas, churches, and lecture halls.
- **TV and media streaming:** households can use Auracast to send TV audio to multiple headphones or speakers simultaneously.
- **Fitness and gyms:** gyms can broadcast different music channels or instructor-led training sessions.
- **Social and group experiences:** groups of friends can listen to the same music or audio from a single phone or speaker.

Auracast as an Alternative to Hearing Loops

Hearing loops, whilst effective, have several limitations - including high installation costs, maintenance requirements, and compatibility issues with certain hearing aids. Auracast could help address these challenges through:

- **Universal compatibility:** Auracast is expected to support a wide range of Bluetooth-enabled devices, making it accessible to a larger audience than hearing loops.
- **Ease of deployment:** unlike hearing loops, Auracast requires minimal infrastructure - reducing installation and maintenance costs.
- **Scalability:** with the ability to broadcast to an unlimited number of devices, Auracast is ideal for large venues and diverse audiences.

- **Flexibility:** users can access Auracast broadcasts with their existing devices, such as smartphones or hearing aids equipped with Bluetooth LE Audio.

Licencing

Auracast is a licenced trademark of the Bluetooth SIG[1], and in order for a venue to legitimately advertise its support for Auracast, it will be required to register. This will then provide the license to use the Auracast™ trademarks in that location.

Compatibility and Adoption

Auracast is expected to be adopted by manufacturers of Bluetooth LE Audio-enabled devices, including:

- Smartphones, tablets, and computers.
- Wireless headphones and earbuds.
- Hearing aids and assistive listening devices.
- Public audio broadcasting systems.

Auracast features are likely to start to be available in Bluetooth enabled audio devices over the next few years. However, in early 2025 it has only just been announced as *future* functionality and there few products available to purchase. It may be possible to provide Auracast as a software update for some devices, but for many potential users it will require the acquisition of new devices.

Adoption is therefore likely to take time as it will take some time for the technology to be adopted beyond high specification phones and use in wireless headphones etc. However, once it is adopted by the core hearing aid suppliers, and then organisations providing widescale hearing solutions including the NHS - where a hearing aid is expected to be used for an average of 5 years, then its adoption will become widespread.

In the interim, and in advance of passengers having ready access to the technology, where you are planning invest in audio equipment to support those with hearing impairments, which is expected to have a lifespan into the 2030's, then it is worth considering when to start adoption of Auracast.

Conclusion

Auracast Bluetooth represents a significant step forward in wireless audio technology. By enabling easier audio sharing and public broadcasting, it has the potential to make a major shift in how anyone can experience sound. As more devices adopt this technology, it is expected to become increasingly important as an accessibility aid.

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[1] https://www.bluetooth.com/about-us/