



Where are we now? Where will we go?
The concept, the opportunities,
the challenges.

WEBINAR

ASSISTIVE LISTENING SYSTEMS AND
THE FUTURE OF HEARING ACCESS



Co-funded by
the European Union



European Association of Hearing Aid Professionals



THOMAS
MORE

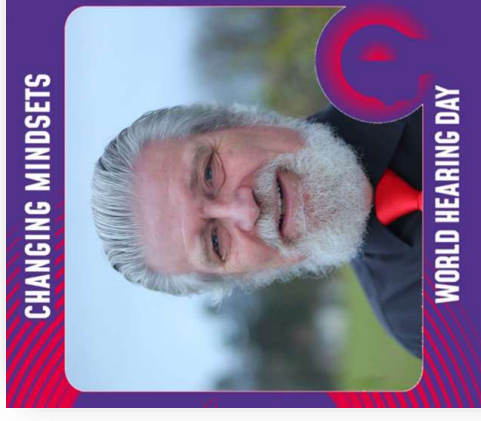


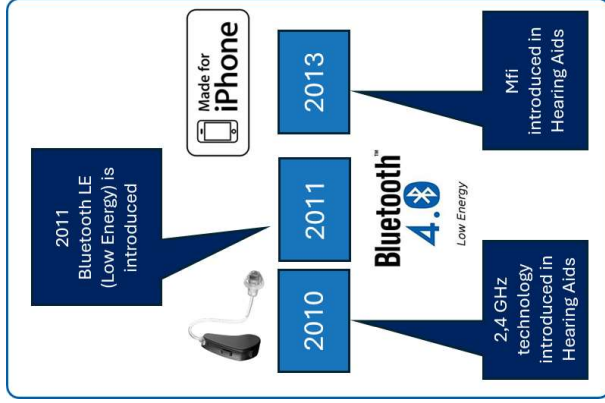
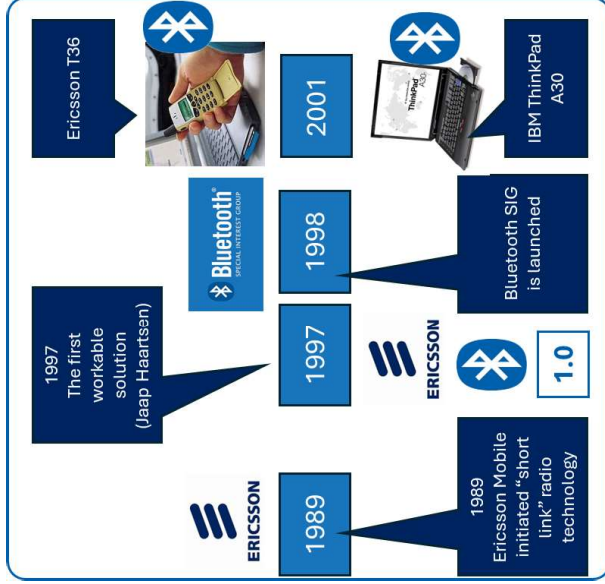
Mark Laureyns

AEA – European Association of Hearing Aid Professionals

Thomas More University College –
Department of Audiology – Antwerp –
Belgium

CRS – Amplifon Centre for research and
studies - Milan





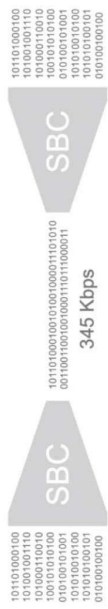
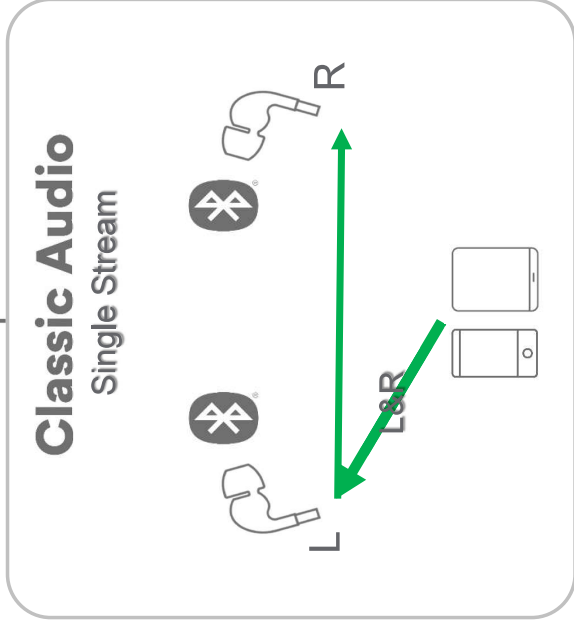
Bluetooth is used for regular phone calls. Sound quality and delays are not so important. Next to sound also printers, keyboards and other devices use BT

Bluetooth LE was high on the request list of the Hearing Instrument Manufacturers. The better sound quality, shorter delays and lower energy demand was essential.

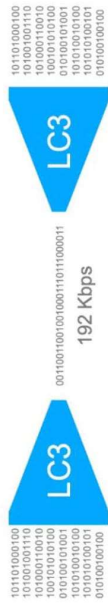
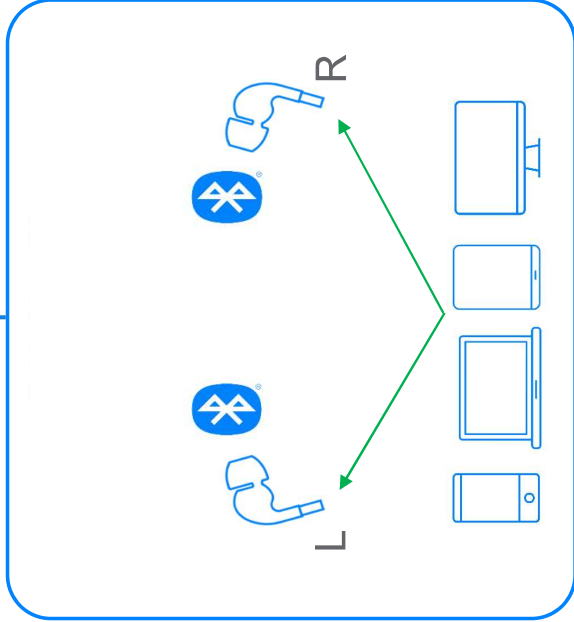
Bluetooth LE Audio is a logical step towards better sound quality for earbuds, headphones and hearing aids. Now BT moves towards broadcasting, also in public spaces



Bluetooth audio



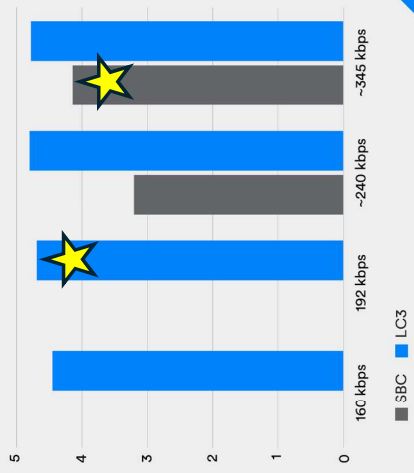
SBC codec
Sound quality rating: 4,14 / 5 ★



LC3 codec
Sound quality rating: 4,69 / 5 ★

★ Higher quality at half the power

Bluetooth® Codec Comparison Standard Stereo Listening Test



Source: FORCE Technology, SenseLab

SBC codec
(Smart Bitrate Control)

LC3 codec
(Low Complexity Communication Codec)



ITU-R BS.1116-3 - (02/2015)



EFHOH
EUROPEAN FEDERATION OF HARD OF HEARING PEOPLE



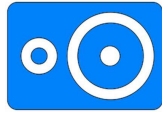
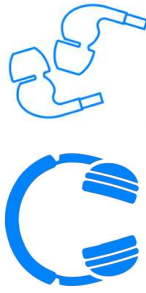
European Association of Hearing Aid Professionals



A BLUETOOTH TECHNOLOGY

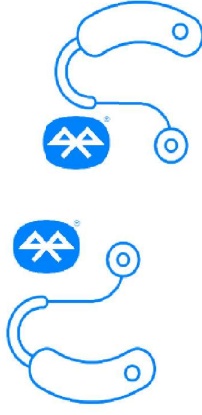


Better Performing
Bluetooth Audio Products

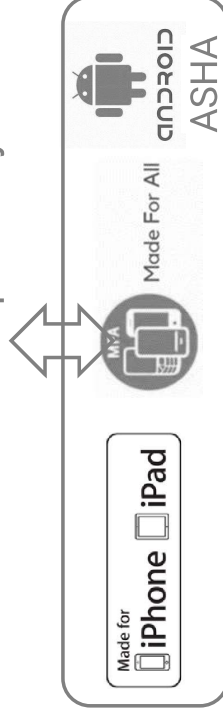


Higher Quality
Better Performance
Lower Power

Greater availability of
Bluetooth hearing aids



New Standardization
Increased Performance
Global interoperability



Broadcast Audio



AURACAST™
A BLUETOOTH® TECHNOLOGY





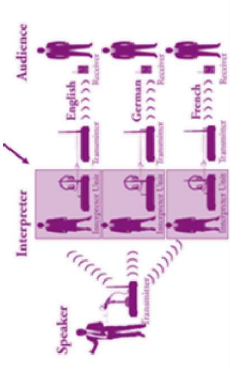
Silent Screens



Tour Systems

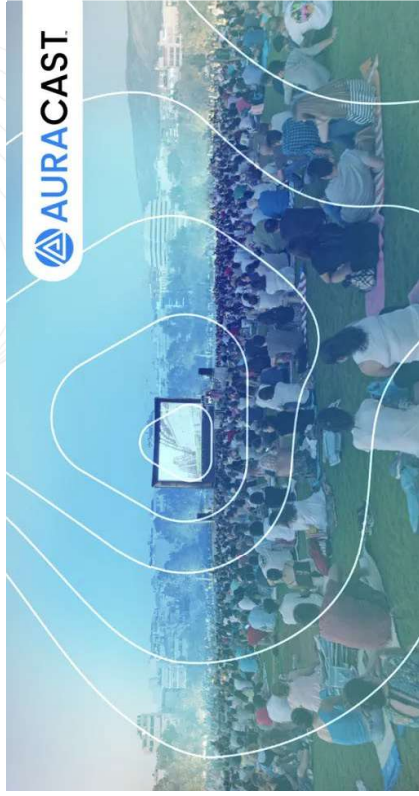


Multi-language Support

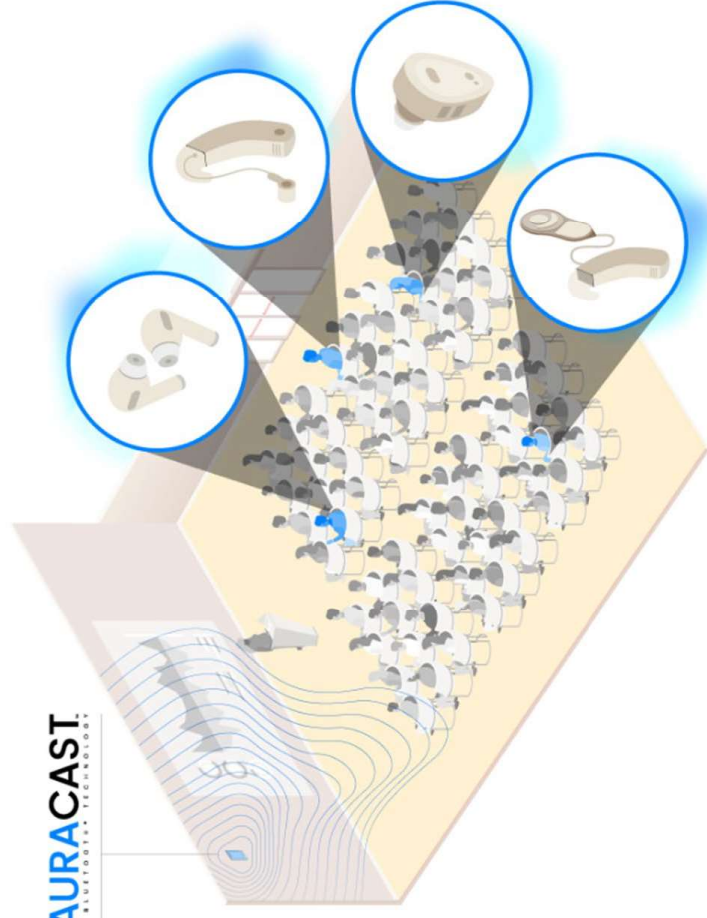


Augmented/Assistive Listening





AURACAST
A BLUETOOTH TECHNOLOGY



European Association of Hearing Aid Professionals

AURACAST
A BLUETOOTH TECHNOLOGY



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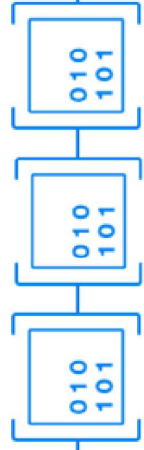




Auracast™ Broadcast

Advertisements

(broadcast name, contents, configuration...)



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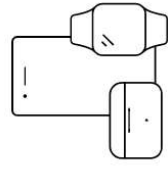
(left stereo)

001010101101000

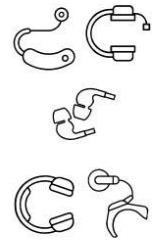
(right stereo)

Audio Streams

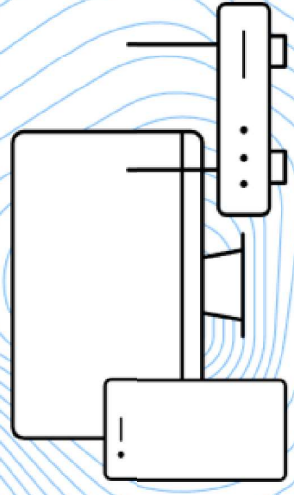
(optional)
Auracast™ Assistant
(smartphone, smartwatch, hearing aid remote...)



Paired Bluetooth®
Connection



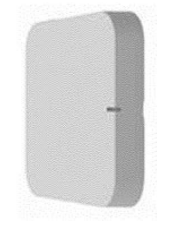
Auracast™ Receiver
(headphones, earbuds, hearing aid...)



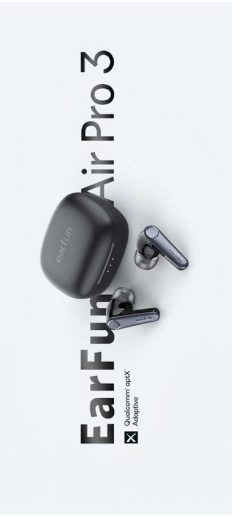
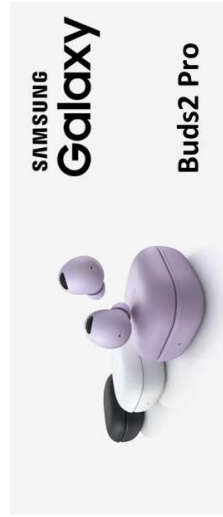
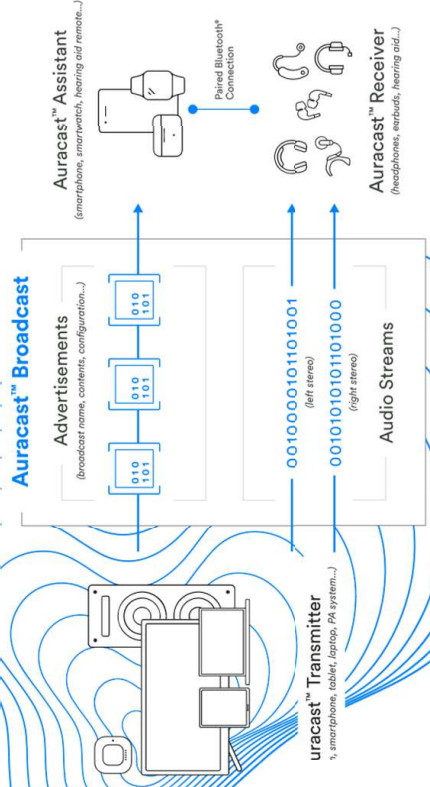
Auracast™ Transmitter

(television, smartphone, tablet, laptop, PA system, ALS...)





Where are we now?



EFHH
EUROPEAN FEDERATION OF HARD OF HEARING PEOPLE

THOMAS **MORE**
C R S A

AURACAST™
A BLUETOOTH™ TECHNOLOGY

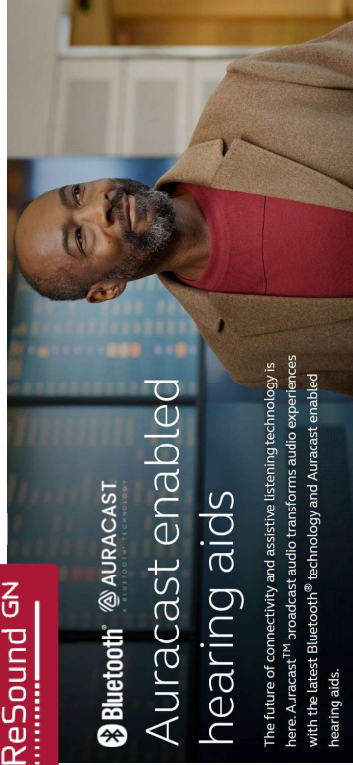
AEA
European Association of Hearing Aid Professionals

ReSound GN



Auracast enabled hearing aids

The future of connectivity and assistive listening technology is here. Auracast™ broadcast audio transforms audio experiences with the latest Bluetooth® technology and Auracast-enabled hearing aids.



Catch all sides of the conversation

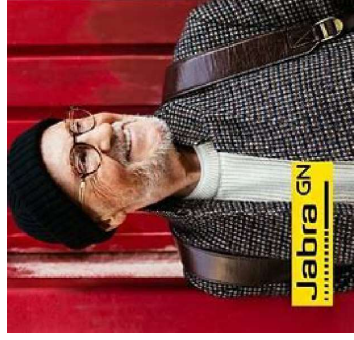
with the groundbreaking Pure Charge&Go IX

Signia hearing aids, including the Pure Charge&Go IX, are Auracast-ready. A firmware update is needed to enable Auracast on these devices



Beltone

How to connect to an Auracast™ broadcast-stream with your phone and hearing aids



Jabra Enhance Pro hearing instruments - Bluetooth®

LE Audio Streaming & Auracast™

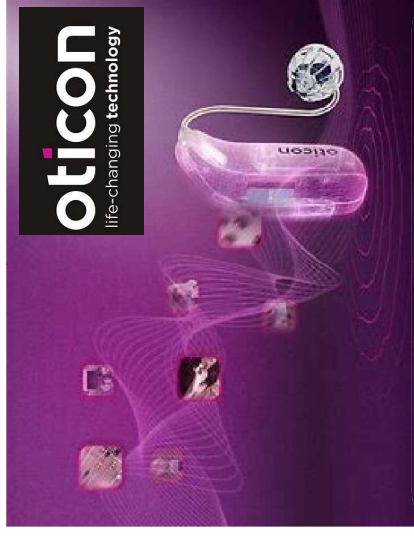
Jabra Enhance Pro 20 hearing aid users can connect to the next generation Bluetooth LE Audio and Auracast broadcast audio.



European Association of Hearing Aid Professionals



EUROPEAN FEDERATION OF HARD OF HEARING PEOPLE

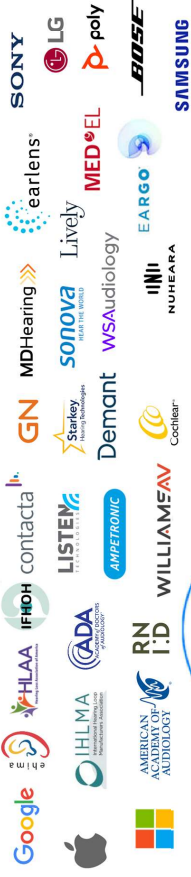


oticon
life-changing technology

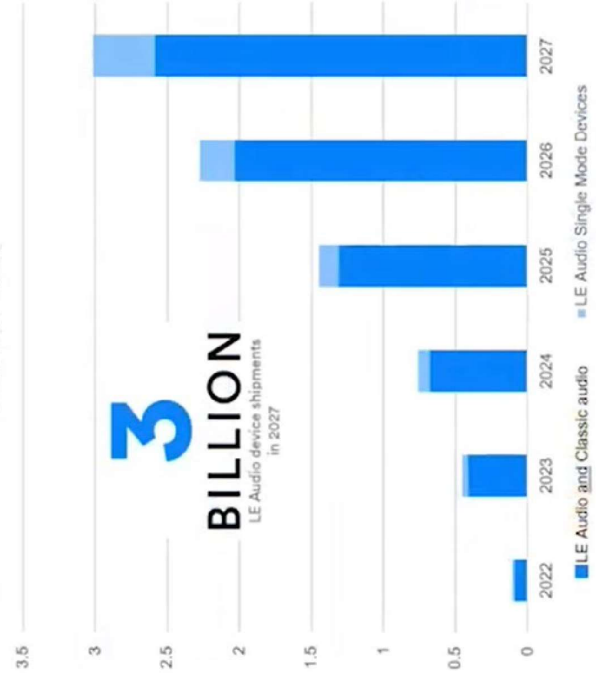
With Bluetooth LE Audio, Oticon Intent is a future-proof hearing aid, ready for future technologies, such as Auracast™.

ReSound Nexia, Beltone Serene and Jabra Enhance Pro 20 are currently **enabled for Auracast**. Hearing aids that are "**Auracast-ready**" (needing only a firmware update to enable Auracast) include Signia IX, Oticon Intent, Philips 9050, Rexton Ready, as well as the JLab HEAR OTC hearing aid. For cochlear implants, the Cochlear Nucleus 8 sound processor is **Auracast ready**.

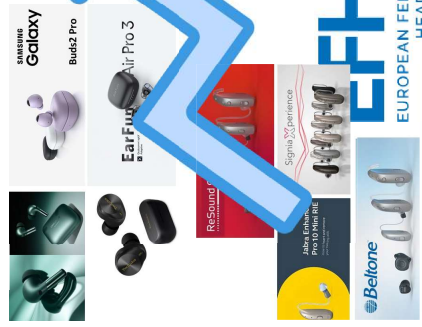
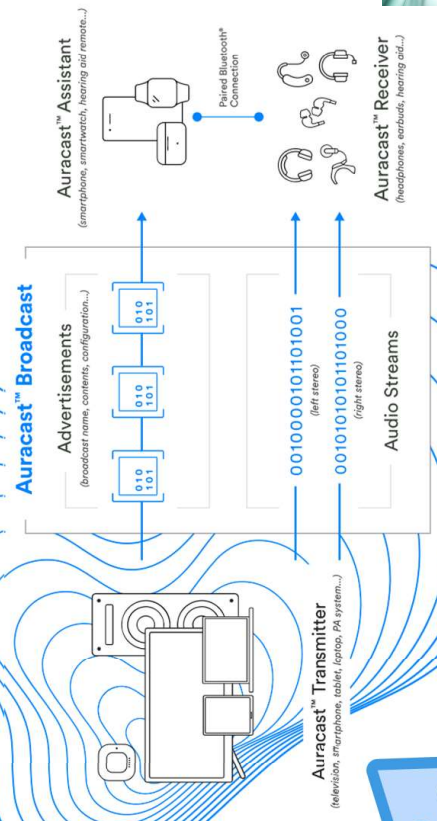




Bluetooth LE Audio Device Shipments by Supported Audio Modes
numbers in billions



Where are we going?



Source: ABI Research





International
Electrotechnical
Commission

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS – HEARING AIDS –

Part 17: Assistive listening system for hearing aid users based on 2,4 GHz audio streaming

- Hearing aid requirements
 - RF sensitivity
 - Connection time
 - Auto switching
 - Latency
- Transmitter requirements
 - Advertising
 - Metadata
 - Program info
 - Configurability
- Verification of Transmitter performance
 - Test equipment
 - Coverage (packet loss criterium)
 - Audio signal levels



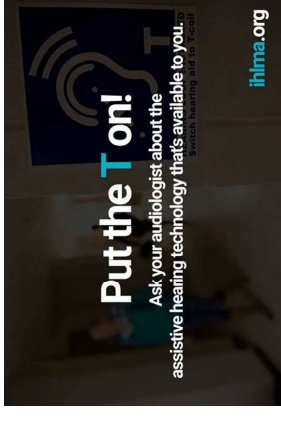
What about the Audiologist?

Telecoils and Hearing Loops: An Interview with Juliette Sterkens, AuD

Feb 18, 2019 | Assistive Technologies | 5 | ★★★★★



What you don't know about hearing aids | Juliette Sterkens | TEDxOshkosh



Relevance of Telecoils in a Bluetooth World

LEARNING OBJECTIVES:

- Specify why telecoil orientation is important and describe 3 different telecoil programs
- Explain one verification and one validation telecoil measure
- Describe how ways professionals can help promote hearing loops in the community

Juliette Sterkens, AuD

- Logopediste - Hoensbroek, the Netherlands (1975)
- Masters degree in Audiology - U of Wisconsin at Oshkosh (1983)
- AuD degree - Arizona School of Health Sciences (2006)
- Retired from private practice in 2012
- Currently: HLAA's Hearing Loop Advocate

Disclosures:
I receive a consulting fee from the Hearing Loss Association of America (HLAA)

Thanks to a generous grant from the David & Carol Myers foundation

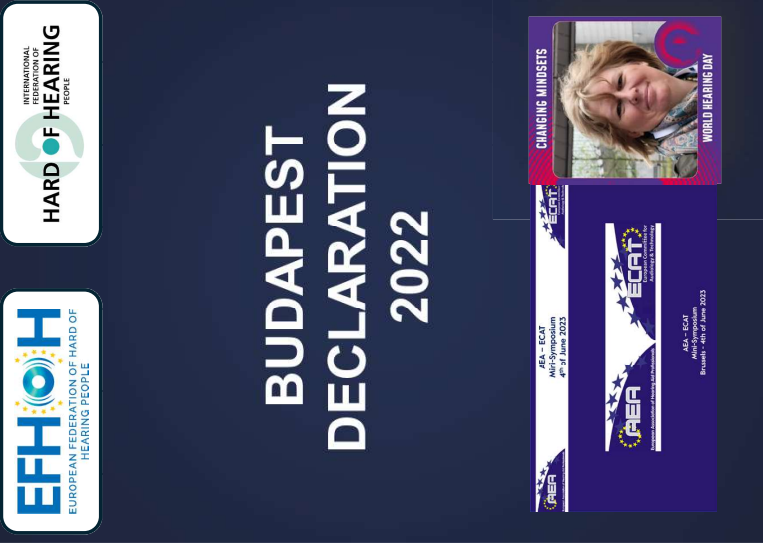
THE HearingReview



What about the Audiologist?

There is a concern from the user associations, EFHOH / IFHOH, that telecoils in hearing aids, will disappear, before Auracast is fully rolled out and available in all hearing aids and public spaces.

AEA understands this concern, and we support the IFHOH/EFHOH Budapest Declaration 2022. We should not kill the telecoil, before the full roll-out (will take at least 8 years)



While Auracast may be coming, telecoils and hearing loop systems remain the proven and existing assistive systems for hearing aid users—**today**.

*IFHOH welcome new communication technologies, that can help hard of hearing people. The latest new and promising Bluetooth technology is **Auracast**.*

*We, as the users of these hearing devices are excited to test the new possibilities of the Auracast technology, but we want the proven **Telecoil** to stay in these hearing devices and **work in parallel** to Auracast.*



Conclusions

- Bluetooth technology started in 1989.
- Bluetooth LE and Bluetooth LE Audio are not the same!
- BT LE Audio has better sound quality at half the power
- AURACAST is the Broadcast application to all compliant headphones, earbuds, hearing aids, ...
- AURACAST can be used for:
 - Silent Screens
 - Tour Systems / Public Announcements
 - Multi-language Support
 - Assistive Listening
- The available AURACAST transmitters, compliant device, receivers, earbuds and even hearing aids are increasing rapidly
- The IEC standard 60118-17 is in development
- But we should not kill the telecoil, before the full roll-out (will take at least 8 years)



European Association of Hearing Aid Professionals



AURACAST™ :

Where are we now? Where will we go?
The concept, the opportunities,
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Mark Laureyns
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CRS – Amplifon Centre for research and studies – Milan



Much of the content was kindly provided by Nikolai Bisgaard, European Hearing Instrument Manufacturers Association (EHIMA)



THANK YOU



36th
WCA
World Congress
of **Audiology**

Save | 19 > 22
the date | September 2024

Paris, France CNIT Paris La Défense

wca2024paris.com

With the support of
SFA Société Française d'Audiologie
SFOAL Société Française d'Otologie et d'Audiologie
ISA International Society of Audiology



Make Listening Safe Session

Thursday the 19th of September 17-18h

There's more to Audiology

than meets the Ear

Friday the 20th of September 12:15-13:30



European Association of Hearing Aid Professionals



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MORE



• References

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