

1. This document was created to support maximum accessibility for all learners. If you would like to print a hard copy of this document, please follow the general instructions below to print multiple slides on a single page or in black and white.
2. This handout is for reference only. Non-essential images have been removed for your convenience. Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date.
3. Copyright: Images used in this course are used in compliance with copyright laws and where required, permission has been secured to use the images in this course. All use of these images outside of this course may be in violation of copyright laws and is strictly prohibited.
4. Social Workers: For additional information regarding standards and indicators for cultural competence, please review the NASW resource: [Standards and Indicators for Cultural Competence in Social Work Practice](#)
5. Need Help? Select the “Help” option in the member dashboard to access FAQs or contact us.

How to print Handouts

On a Mac

- Open PDF in Preview
- Click File
- Click Print
- Click dropdown menu on the right “preview”
- Click layout
- Choose # of pages per sheet from dropdown menu
- Checkmark Black & White if wanted.

On a PC

- Open PDF
- Click Print
- Choose # of pages per sheet from dropdown menu
- Choose Black and White from “Color” dropdown

No part of the materials available through the continued.com site may be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of continued.com, LLC. Any other reproduction in any form without such written permission is prohibited. All materials contained on this site are protected by United States copyright law and may not be reproduced, distributed, transmitted, displayed, published or broadcast without the prior written permission of continued.com, LLC. Users must not access or use for any commercial purposes any part of the site or any services or materials available through the site.

Exploring ReSound Beyond: Next-Gen Breakthroughs and Auracast broadcast

Megan Quilter, Au.D

Lead Audiologist, GN Hearing A/S

Risks/Benefits

- The applicability and accuracy of the course content may vary by the clinical, geographical, and cultural context; you should evaluate the course accordingly.
- As healthcare is rapidly evolving, new findings may change the validity of the information presented in this course. Providers should always consult the latest research and guidelines from professional associations.
- The interventions discussed in this course may be limited in generalizability, requiring practitioners to consider specific individual and population factors.
- The course may not cover all possible risk factors, diagnostic methods, or treatment options, and complex cases may require additional considerations.
- Healthcare providers should apply cultural competence and sensitivity to ensure effective and respectful care based on their patients' diverse needs.
- Providers should always evaluate the limitations of diagnostic and screening tools, considering their potential for false results as well as any ethical implications.
- It is the responsibility of course participants to critically evaluate the evidence from multiple sources to guide professional practice.

Learning Outcomes

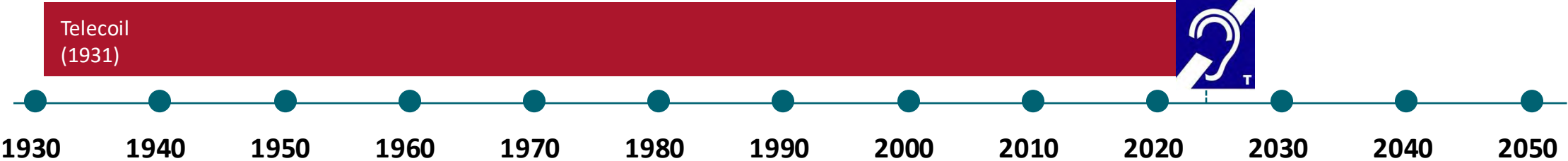
- After this course, participants will be able to explain the history and current landscape of wireless technology.
- After this course, participants will be able to describe the recent challenges and changes that have been made to Bluetooth technology.
- After this course, participants will be able to discuss how Auracast broadcast can support individuals regardless of hearing loss.



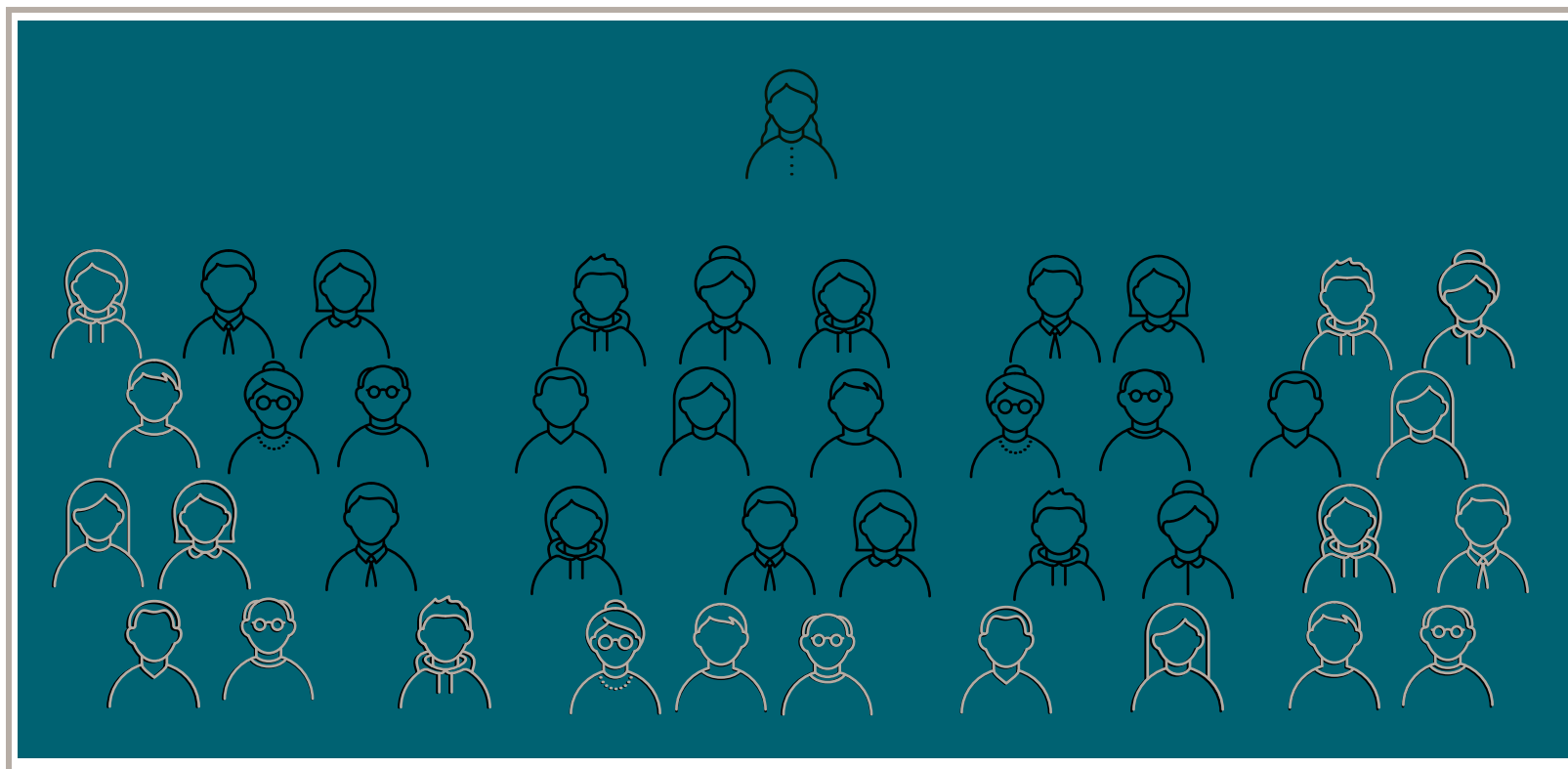
Current landscape

Today

● Analog



Telecoils and hearing loops



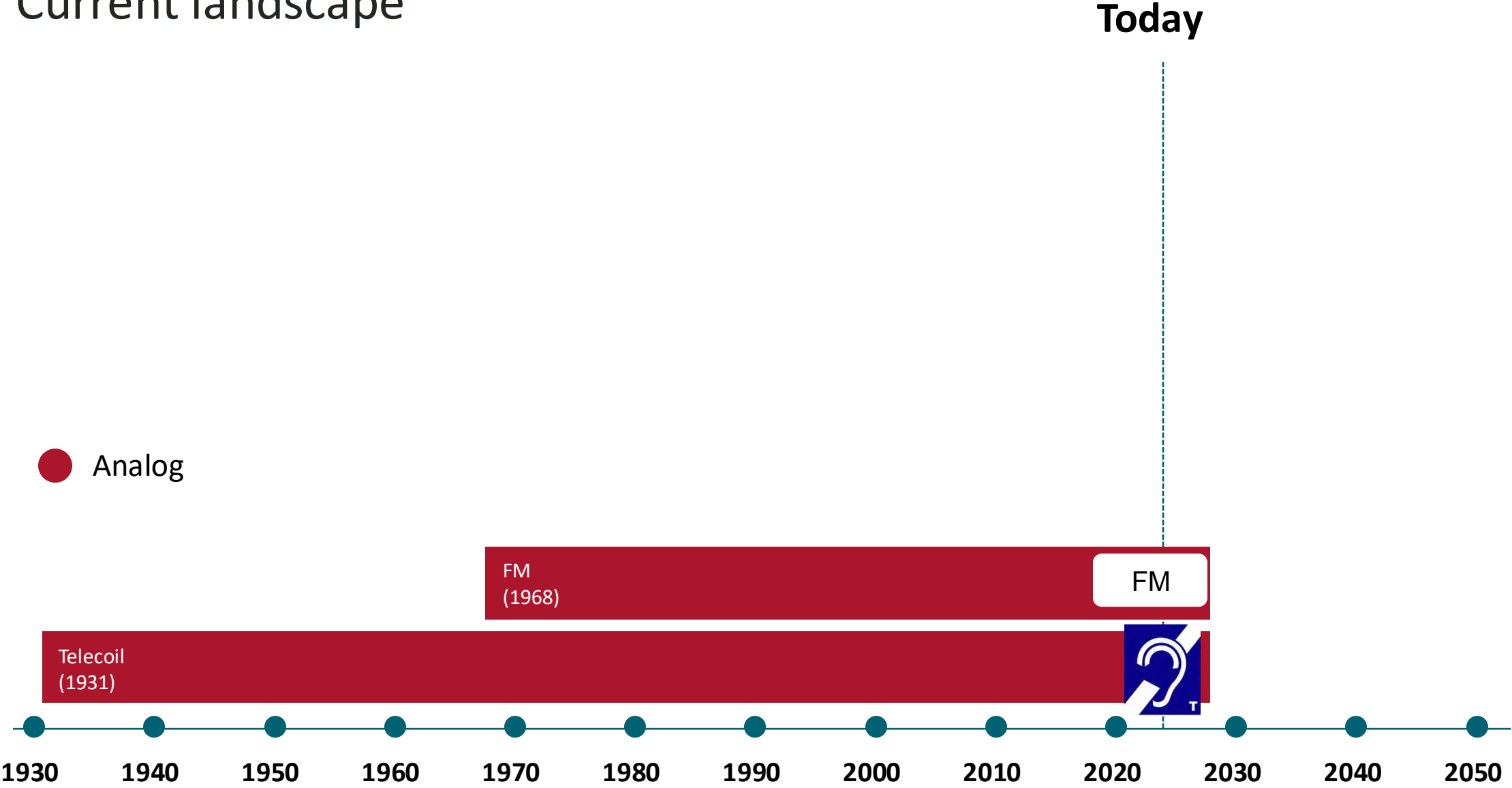
Telecoils: Probably the First Wireless System

Loop systems and telecoils work together with hearing aids to help hard of hearing people hear better.

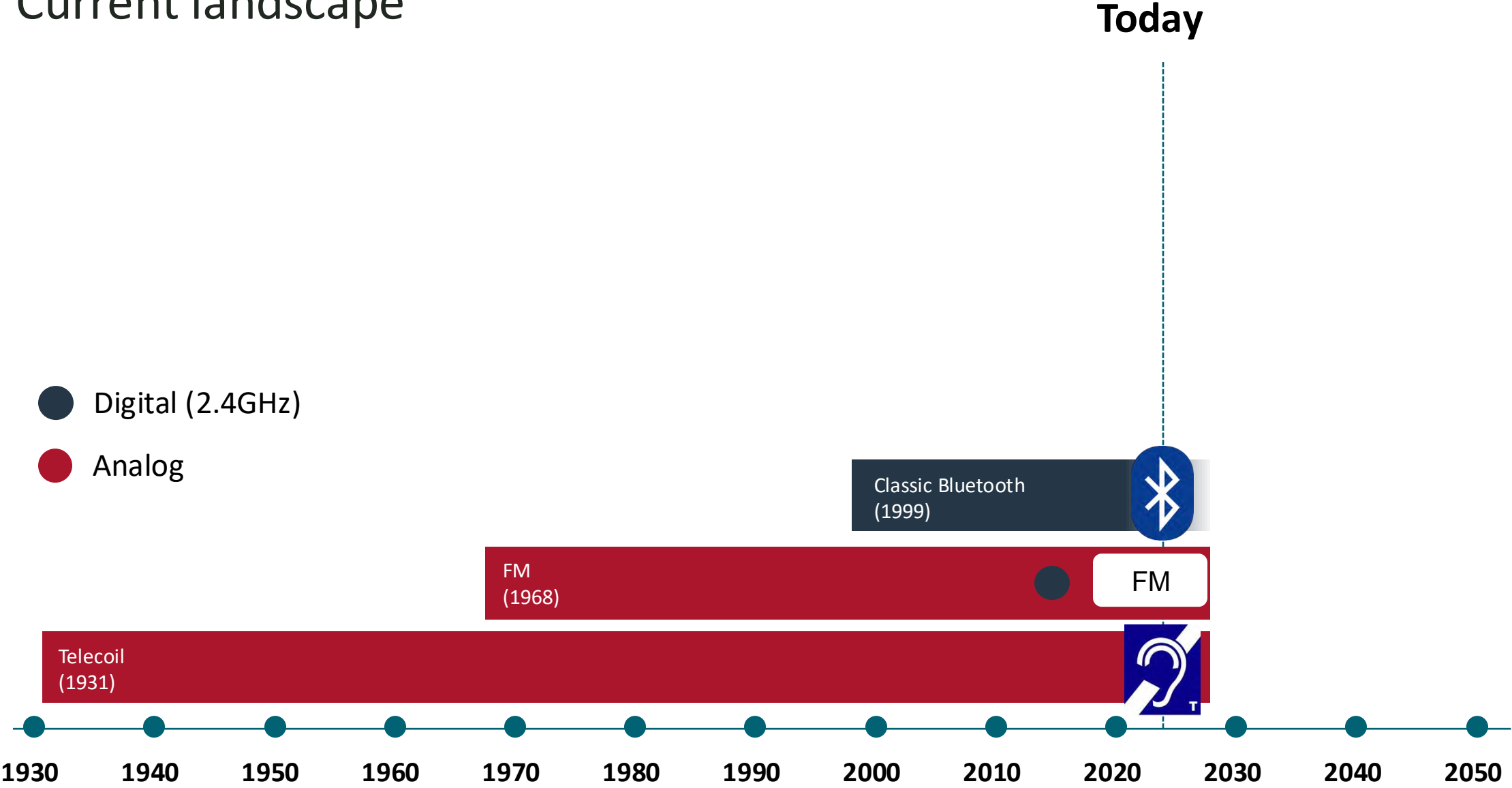
The signal is transmitted as an electromagnetic radiation and requires a telecoil in the hearing instrument.



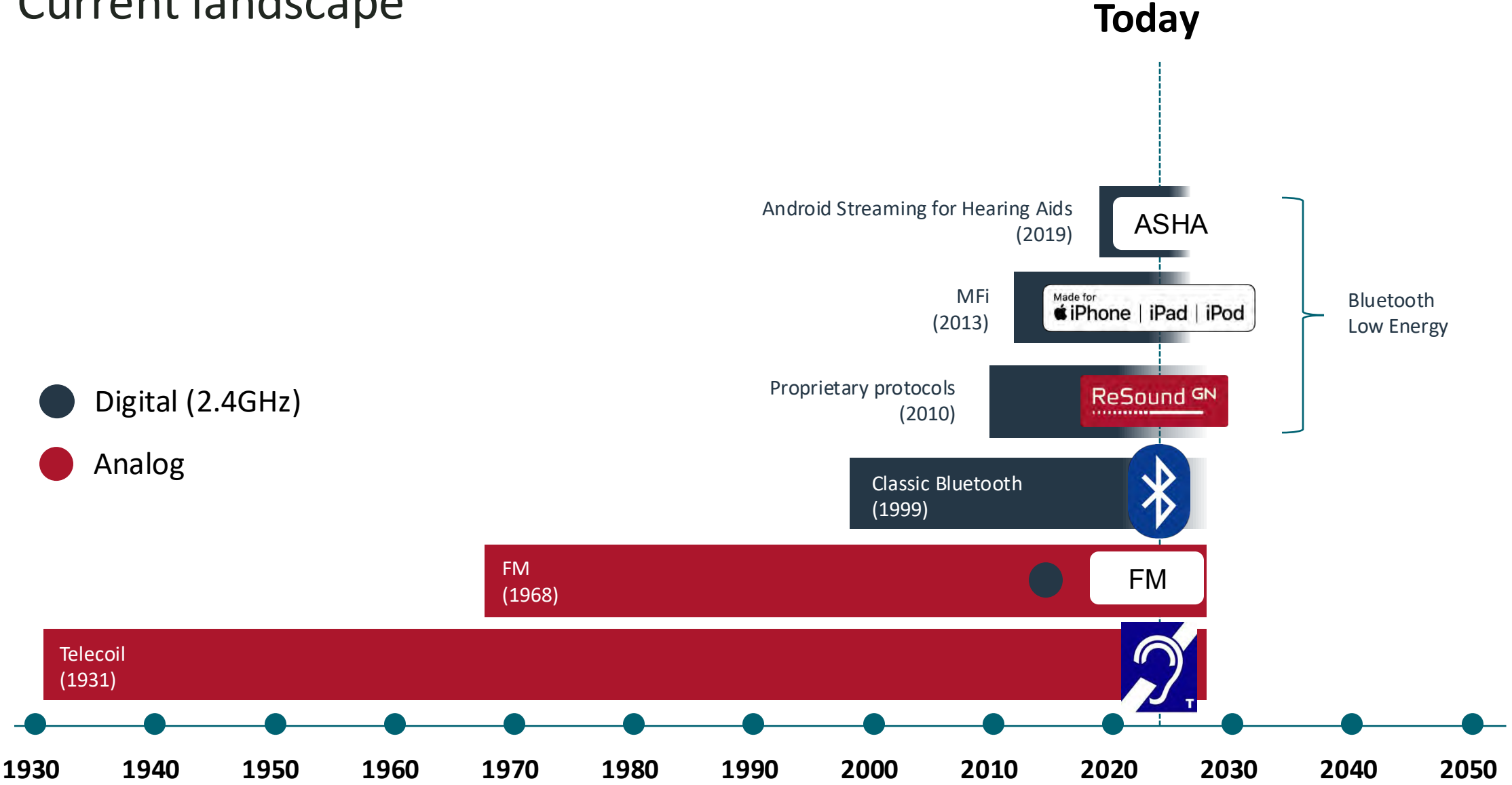
Current landscape



Current landscape



Current landscape





2011

2013

2015

2017

2019

2021

2023

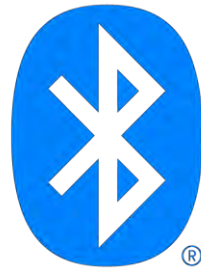
Bluetooth Special Interest Group Collaboration

European Hearing Instrument Manufacturers Association (EHIMA) approached the Bluetooth Special Interest Group (SIG) with a request to develop a new Bluetooth version specifically for hearing aids.

- The key requests were:
 - A dedicated hearing aid profile (HAP)
 - A new CODEC with lower latency
 - A broadcasting mode

What is Bluetooth Special Interest Group (SIG) ?

- Global trade association established in 1998
- Oversees Bluetooth® technology and brand
- Over 38,000 member companies in 150 countries
- Over 5 billion devices using Bluetooth shipped in recent years



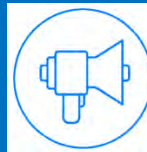
Bluetooth SIG activities



Specification

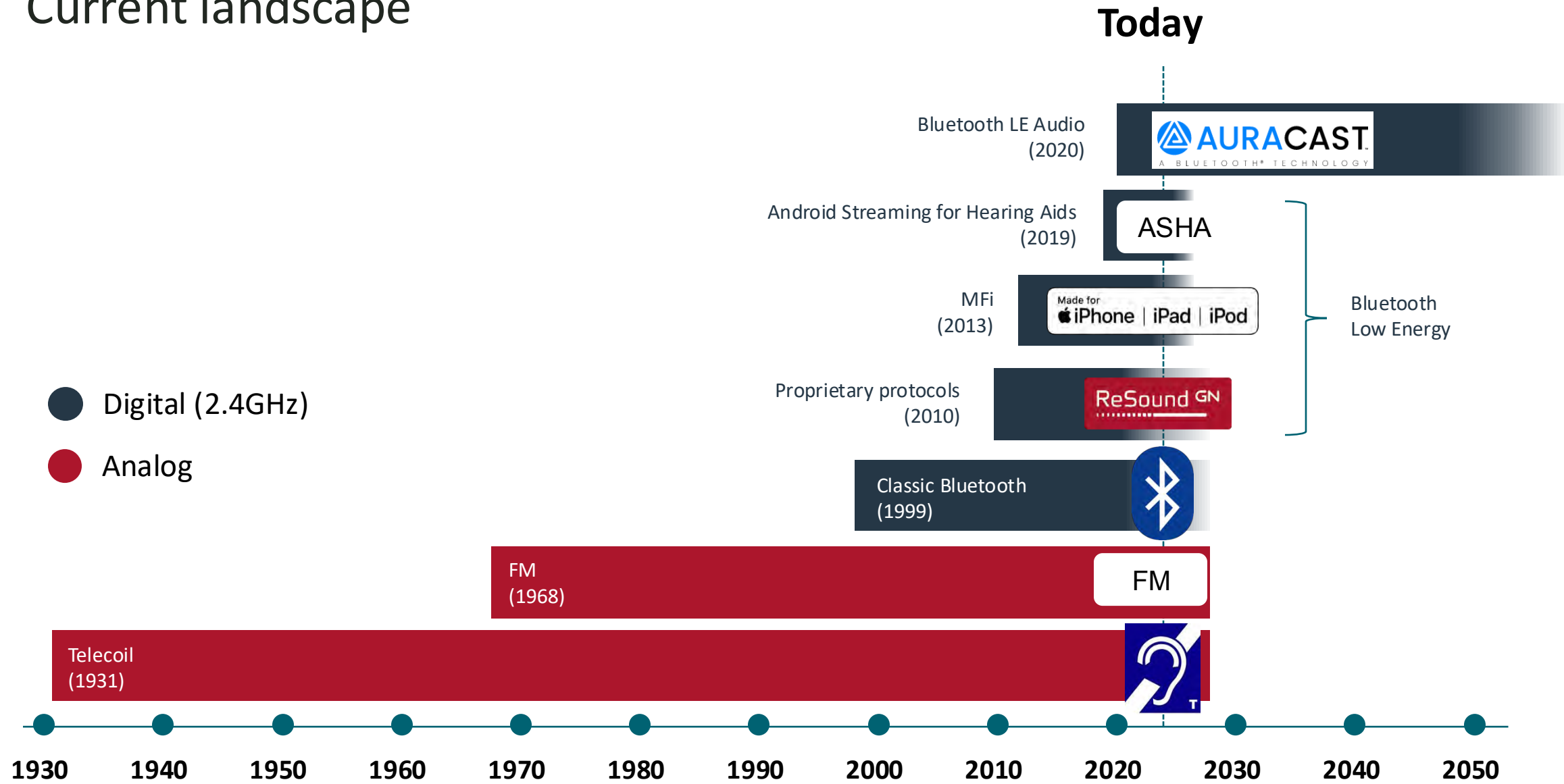


Qualification



Promotion

Current landscape



Benefits of Bluetooth LE Audio



Improved Codec

Better sound quality¹

Lower battery power consumption¹



Multi-stream

Connect to multiple devices simultaneously

Two-way communication: makes possible hands-free calls* in Android phones



 **AURACAST**
A BLUETOOTH TECHNOLOGY

Broadcasting and audio sharing

In personal electronic devices and public places

*Works with ReSound Nexia and compatible mobile devices with Bluetooth 5.3 or later
1. According to Bluetooth Sig

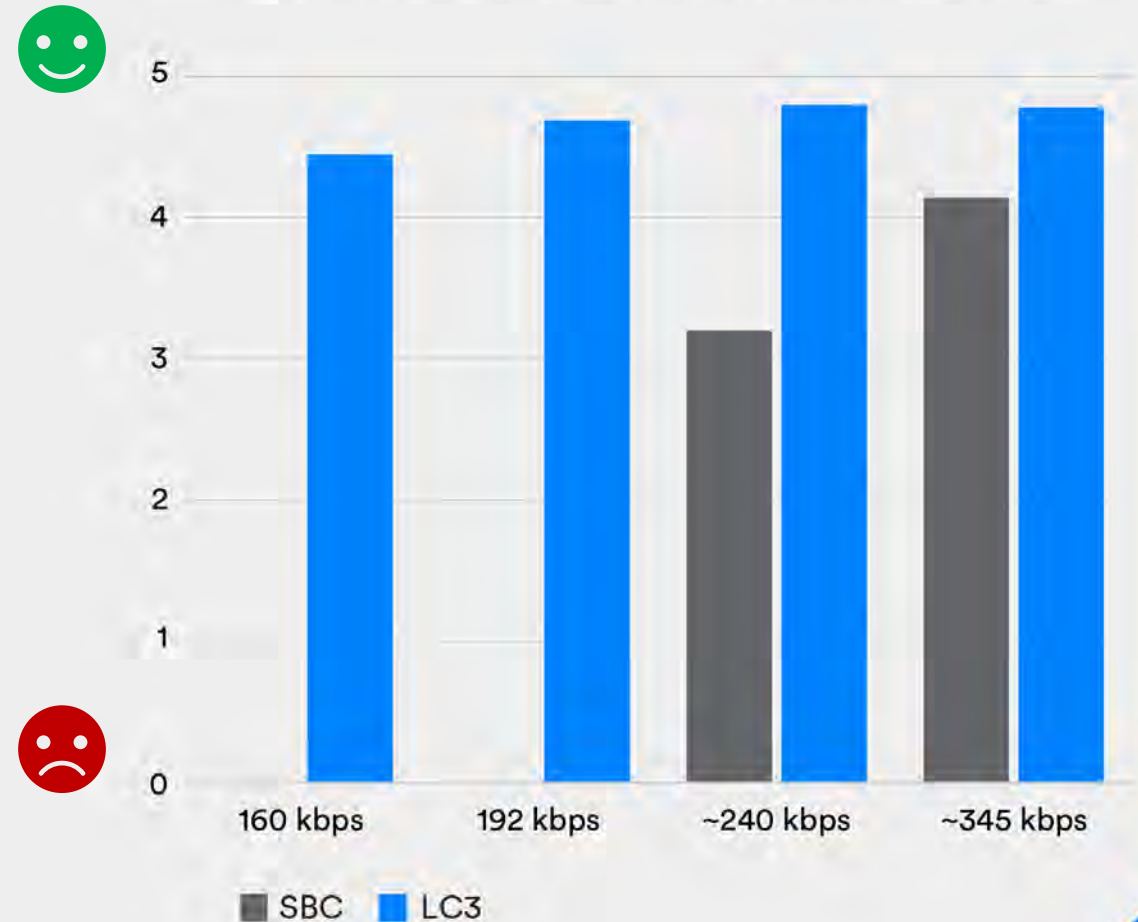
NEW LC3 CODEC

Higher sound quality,
lower power

Preferred sound quality
over Classic Bluetooth even
at lower bit rates.

Bluetooth® Codec Comparison

Standard Stereo Listening Test



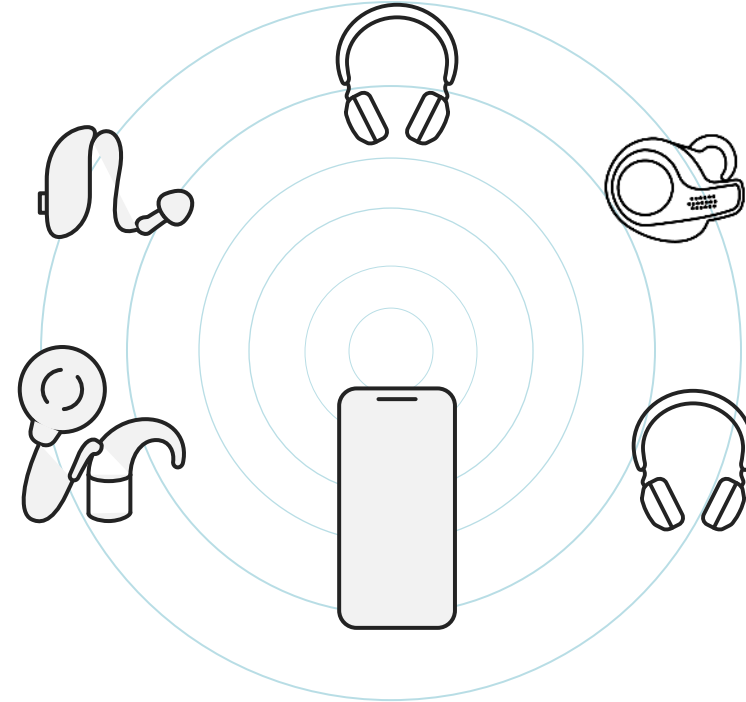
Source: FORCE Technology, SenseLab



What is Auracast broadcast audio?



Classic Bluetooth



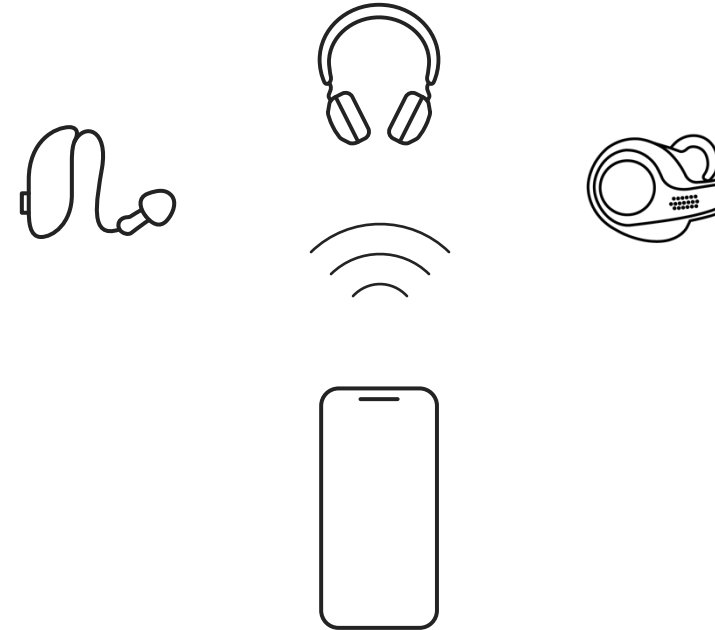
Auracast broadcast audio

What is Auracast broadcast audio?



Classic Bluetooth

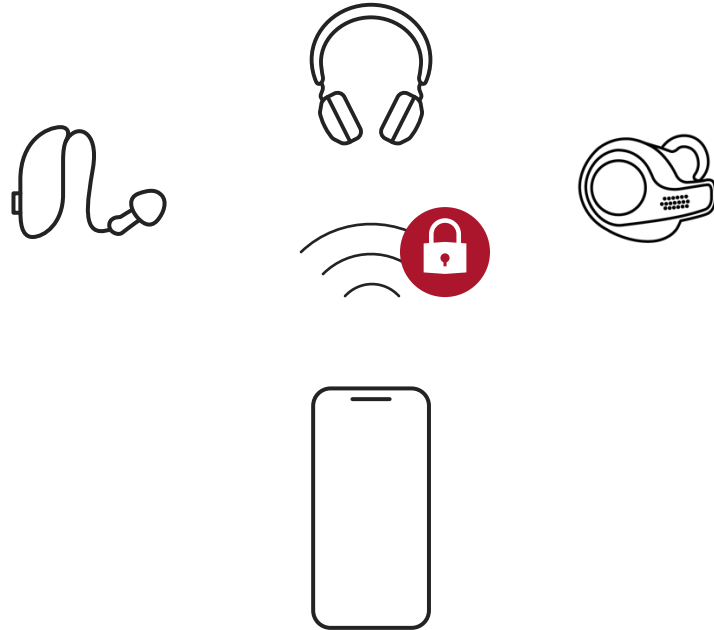
Only allows for one-to-one communication between devices



Auracast Broadcast Audio

Auracast will allow electronic devices to broadcast audio simultaneously to an unlimited number of nearby audio devices with Bluetooth Low Energy Audio

Where can I enjoy Auracast?



Personal electronic devices

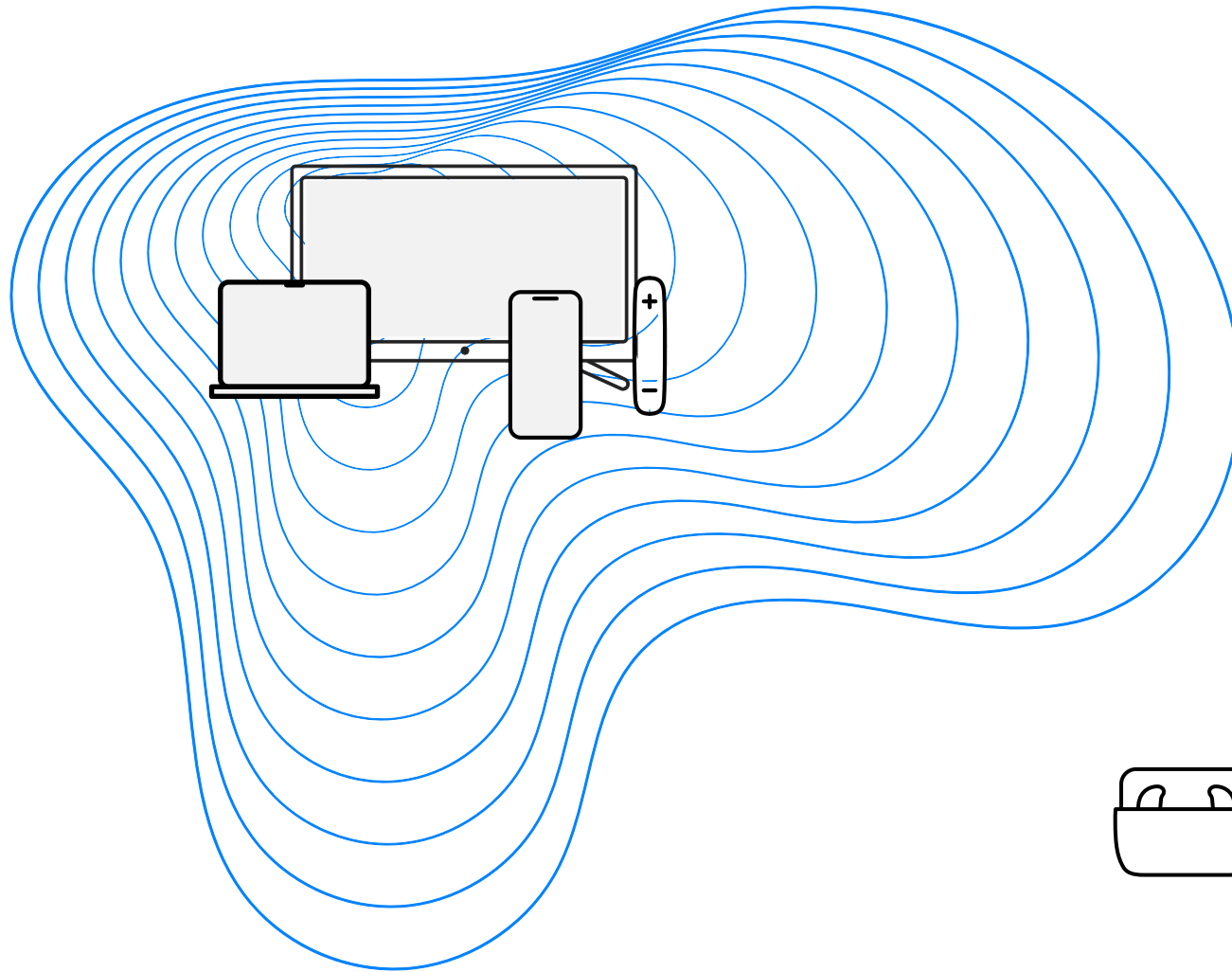


Public places

Auracast broadcast audio can be public for everyone, or private with a password

Auracast™ Transmitter

(television, laptop, TV-Streamer+...)



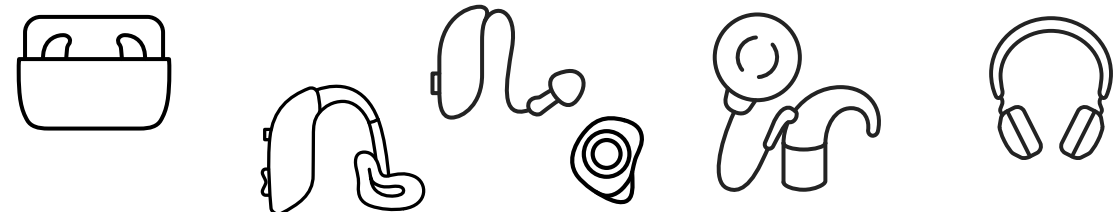
Auracast Assistant

(smartphone, smartwatch...)



Auracast Receiver

(hearing aids, cochlear implants, headphones, earbuds...)



How to connect to



AURACAST™

A B L U E T O O T H ® T E C H N O L O G Y

Step 1: The Auracast transmitter



An Auracast™ transmitter begins an Auracast™ broadcast which provides Auracast™ assistants with information about the broadcast

Step 2: Auracast Assistant



Auracast™ assistants scan for Auracast™ advertisements and provide a user interface (UI) to enable users to select an Auracast™ broadcast to join, similar to Wi-Fi networks in public spaces.

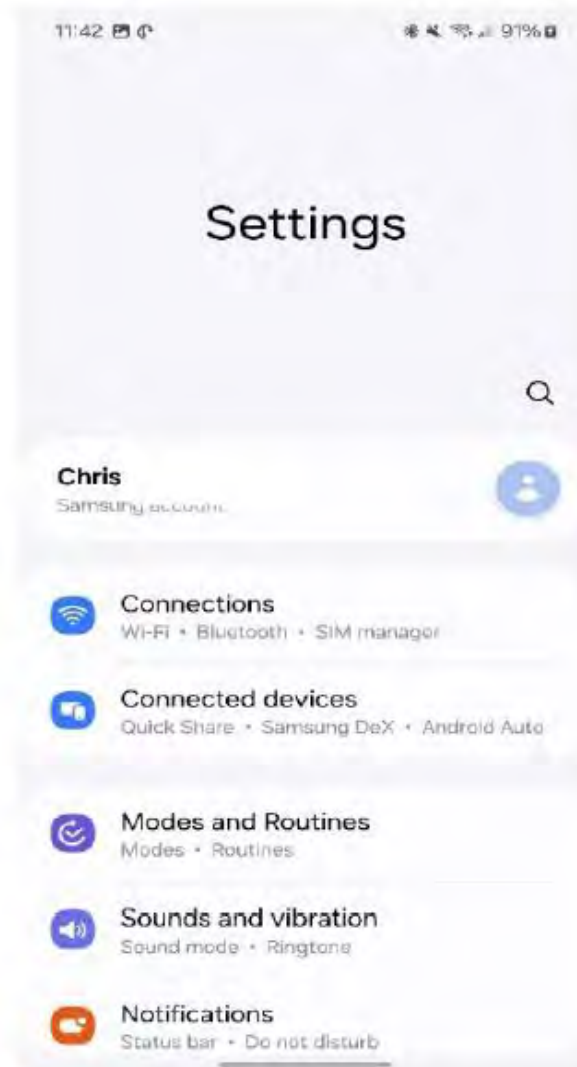
**Step 3:
Join the
broadcast**



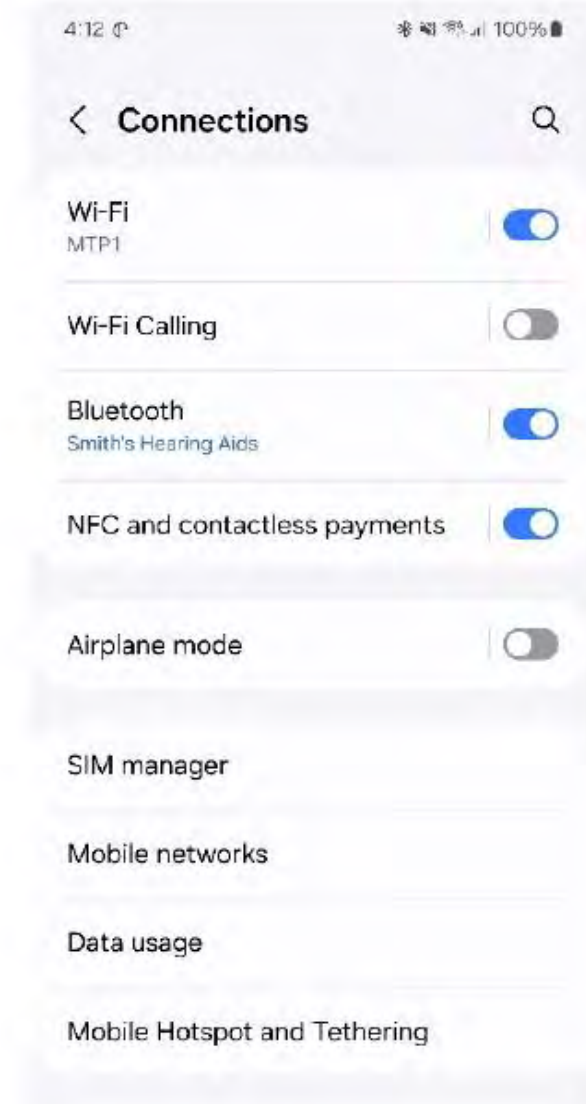
1. On the main menu screen, select **Settings**



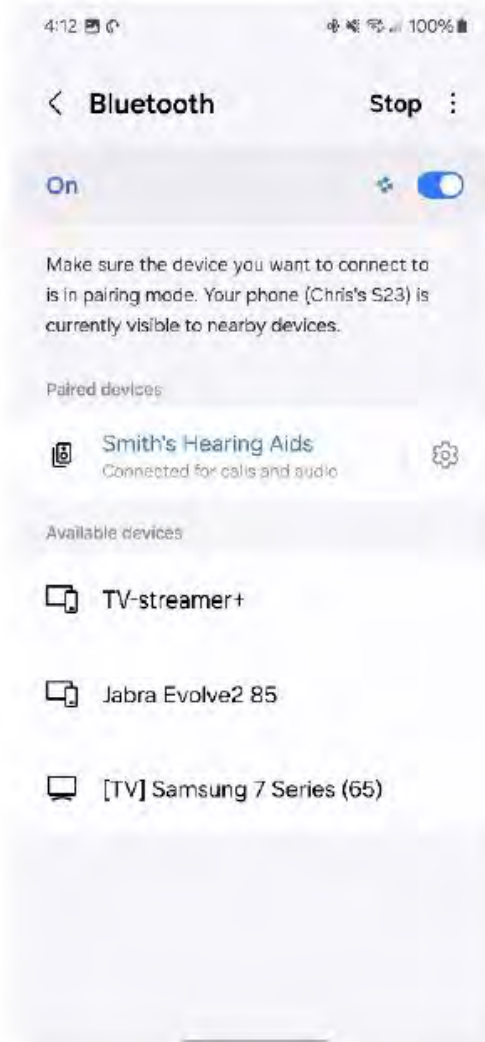
2. Select **Connections**



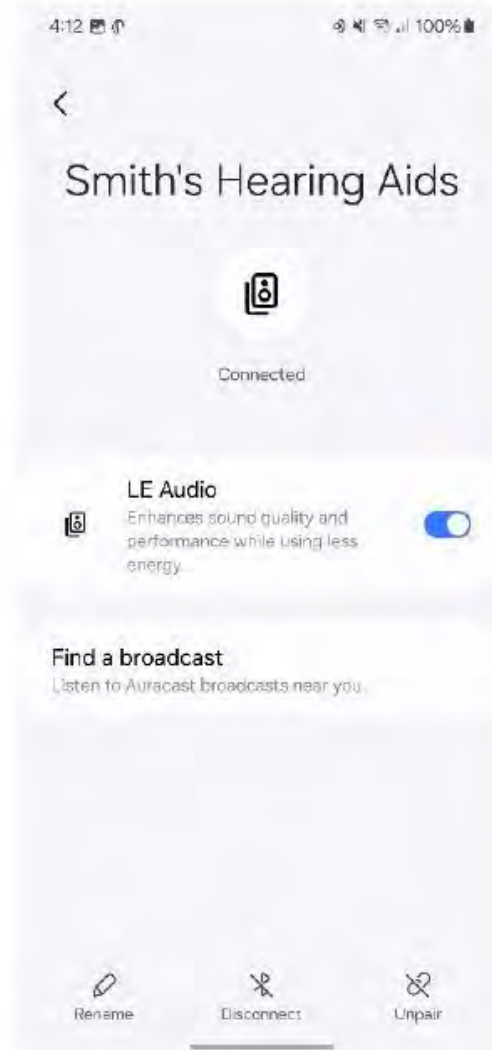
3. Select **Bluetooth**



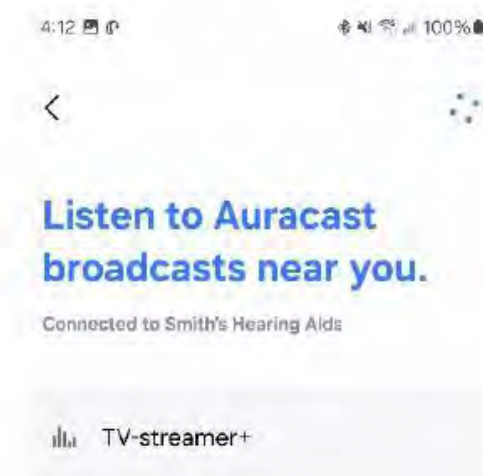
4. Select your hearing aids under **Paired devices**



5. Select **Find a broadcast**



6. Select a broadcast: **TV-Streamer+**



Broadcasting

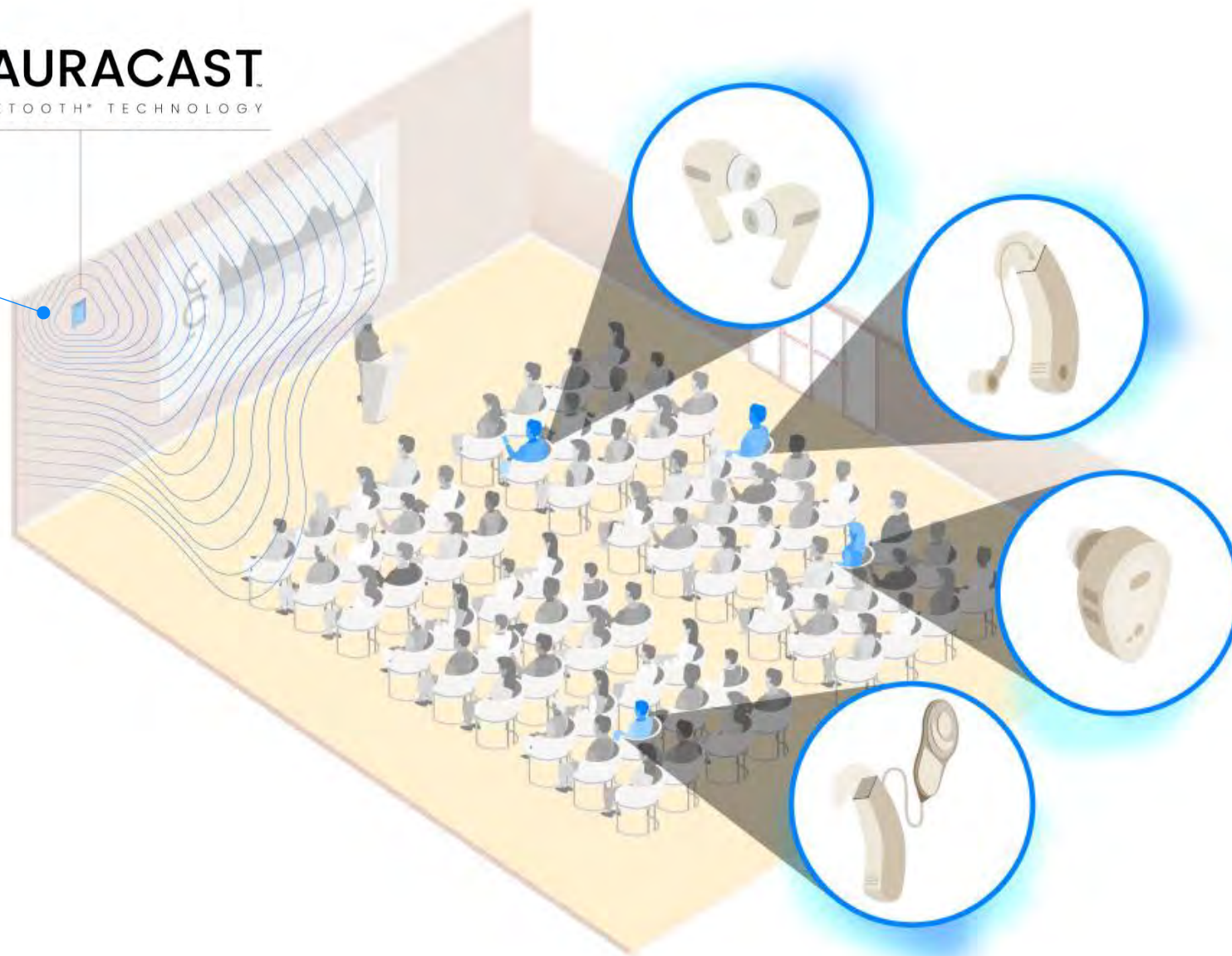
AURACAST
A BLUETOOTH® TECHNOLOGY



2.5 MILLION

locations will offer
Auracast audio globally
by 2030

ABI Research, 2023



Made for Bluetooth® Low Energy Audio and Auracast™

A new era of connectivity that makes the world more hearing friendly and accessible for all

First level



Theater/Cinema



Conference venues



Public transport



Electronic devices



Television



Airports

Auracast concept



- Detailed specifications and requirements qualification is required
- Branding is in place with logos, signs and rules

—

Auracast concept



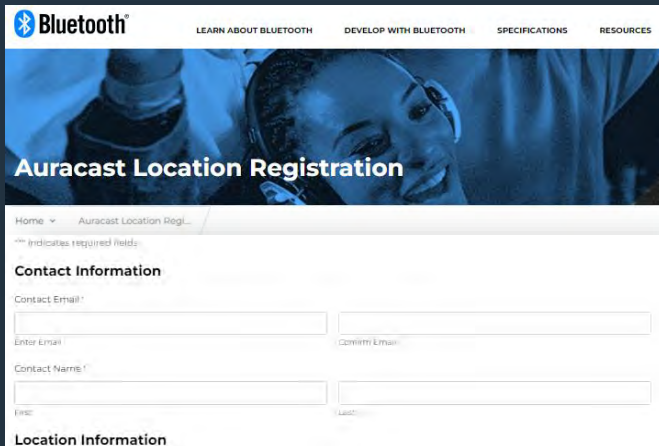
Auracast™ Simple Location Deployment Best Practices Guide

 **Bluetooth® Informational Publication**

- **Revision:** r05
- **Revision Date:** 2022-11-08
- **Group Prepared By:** Market Development
- **Feedback Email:** aspt-main@bluetooth.org

Abstract:

This document provides recommendations to manufacturers and installers of Auracast™ broadcast audio transmitters and systems. The purpose of this document is to assist manufacturers in providing guidance to installers, ensuring uniform access to Auracast broadcast audio at any location or venue claiming support for Auracast. This document will focus on a simple location deployment configuration, recommendations and considerations. Deployment and configuration recommendations for more complex use cases may be inferred from this document but not explicitly covered.

The screenshot shows the Bluetooth Auracast Location Registration web form. At the top is the Bluetooth logo and navigation links: 'LEARN ABOUT BLUETOOTH', 'DEVELOP WITH BLUETOOTH', 'SPECIFICATIONS', and 'RESOURCES'. Below is a header image with the text 'Auracast Location Registration'. The form has a breadcrumb trail 'Home > Auracast Location Regi...' and a note '*** Indicates required fields:'. The 'Contact Information' section contains fields for 'Contact Email*' (with 'Enter Email' and 'Confirm Email' sub-fields) and 'Contact Name*' (with 'First' and 'Last' sub-fields). The 'Location Information' section is partially visible at the bottom.

- Detailed specifications and requirements qualification is required —
- Branding is in place with logos, signs and rules
- Guidelines for how to design and deploy Auracast™ transmitters
- Registration database for locations with Auracast™ with public access

Live is Good, Is Auracast Better?

Real World Demonstrations of Auracast Broadcast Streaming Technology



Nye
Theatre
Oslo



Royal
Theater
Copenhagen



Lincoln
Center
NYC



NOVEMBER 2024

ReSound GN

Lincoln Center



Alice Tully Hall
Starr Theater



LOCATION
1941 Broadway
New York, NY 10023

CAPACITY
1,085 Max

SQUARE FEET
9468

Located within a mere 22-
feet of New York City's
rumbling subway tunnels

Alice Tully Hall
Starr Theater



LOCATION
1941 Broadway
New York, NY 10023

CAPACITY
1,085 Max

SQUARE FEET
9468

2:30 PM Set Up, Stream Check, Sound Check



Facing the Audience





The **187- person ensemble** was broadcasted via Auracast



“The opportunity to hear my own music over Auracast was irresistible –and it exceeded my expectations. I could not be happier.

Richard Einhorn, composer

“I was blown away. For first time I could hear the plucking on the cello and the violin.

Participant

“The concert moved me to tears and left me speechless. What a game changer!

Participant

“The fusion of art and technology is becoming seamlessly interconnected, creating a truly powerful experience.

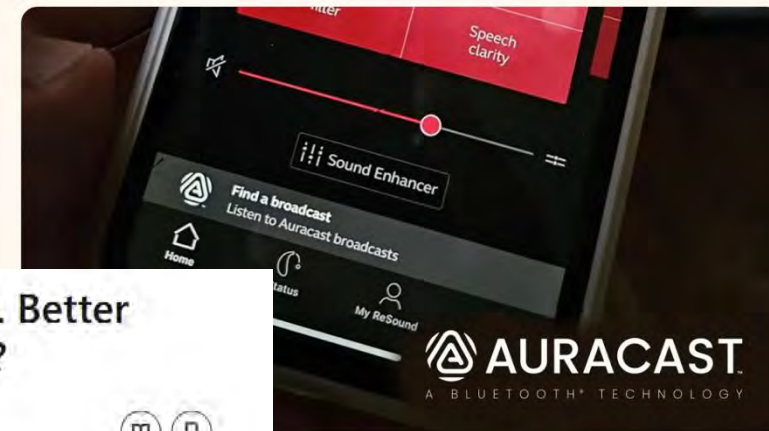
Participant

Resources 2 min read

Auracast Hearing Aids Previewed in New York City

Written by
Andrew Bellavia

Published on
November 5, 2024



Auracast™ Audio. Better than the original?

 Nick Hunn
CTO at WiFore



November 6, 2024

If you've not heard of Auracast™, it's time to find out about it. It's part of the new Bluetooth Low Energy Audio specifications which support broadcast audio. What that means is that it allows individuals and places to share an audio stream, so that multiple people can listen to the same thing.

Auracast builds on the telecoil experience, which has been part of hearing aids for many years, but supports a new codec, called LC3. This can be used to generate high quality audio with such a low latency that the Bluetooth stream can reach your ears at the same time as the ambient stream. Last week, Auracast had its first major public demonstration in the US at a performance of Richard Einhorn's "Voice of Light" in the Lincoln Centre in New York. A number of users, both with and without hearing loss were able to hear how it works. I was one of

Auracast will make the world more hearing friendly and accessible for everyone



Share your audio

Shared listening and watching from your personal device



Hear your best

Public address and assistive listening



Unmute your world

Public TV watching

Areas of impact on patient and daily outcomes

- Aural rehab/Speech therapy
- School/University
- Workplace
- Quality of life (QoL)



Bluetooth Low Energy Audio and Auracast:

- Resolves performance issue
- Provides better user experience for everyone
- Provides better sound quality
- More affordable
- Offers a broader experience
- Is a standardize way to public broadcast

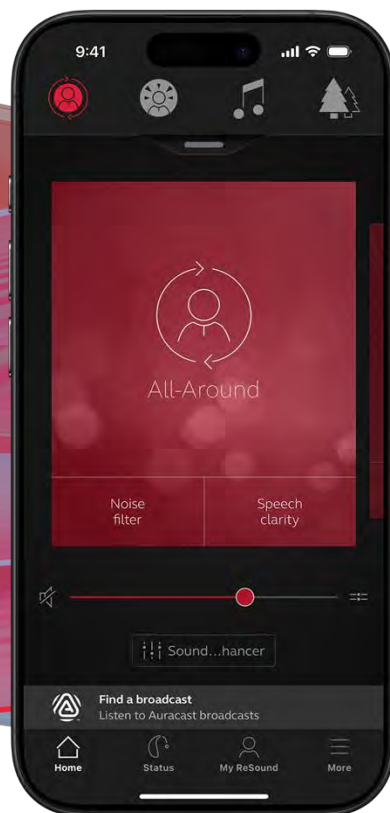


The future of connectivity: Understanding Auracast™

ReSound GN

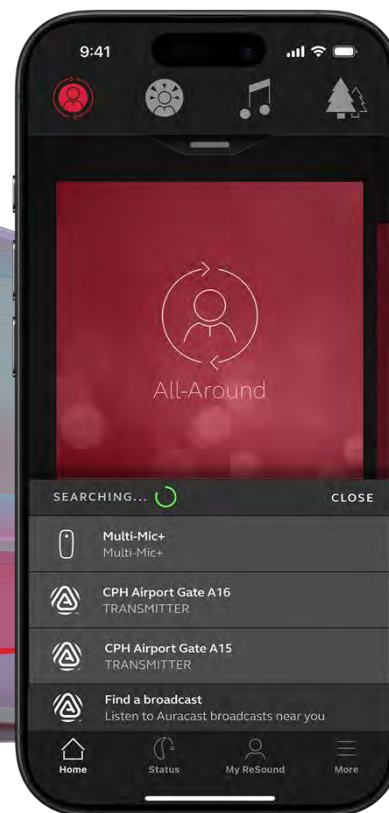


New ReSound Smart 3D app with Auracast Assistant

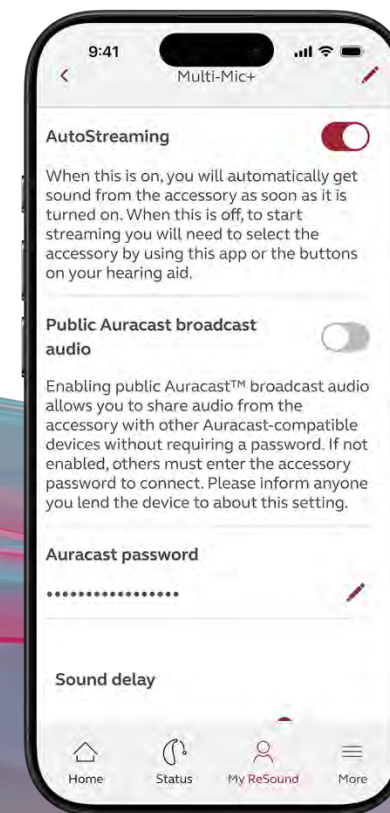


Available for all users

With iOS and Android™ devices compatible
with ReSound Smart 3D



**Access both Auracast and accessory
streams in one list**



**Easily share Auracast streams with family
and friends**

Share and modify passwords to protect your
privacy when using the Multi-Mic+ and TV-
Streamer+

Key Takeaways

- Auracast is the future system for wireless transmission of audio signals in multiple locations and for many types of users
- Auracast brings significant user benefits to hearing aid users
- Auracast will exist in parallel with loop systems for several years
- All types of hearing aids will with time be Auracast™ enabled
- Broad applicability beyond hearing aids and modest cost will ensure rapid deployment

Why Auracast?

- Auracast stands out for its advanced digital signal processing and Bluetooth connectivity.
- It provides a personalized listening experience and seamless connection to electronic devices like smartphones, televisions, and laptops.
- The low-energy option is preferred due to the reduced battery drain, improved audio quality, and improved interoperability.
- There will be so many streams!
- The full potential is immense!

Finally... Normalizing Hearing Loss

- Stigma deeply connected to hearing loss
- Stigma is one of the greatest challenges for hearing aid adoption
- Person sitting next to you can be receiving the same broadcast
- Breaking down the isolation barriers.... TREMENDOUS FETE

Thank you
mquilter@gnresound.com