Hearing without barriers - Inductive hearing system

Ralf Göppert

Disability representative of the city of Bocholt for construction matters and spokesperson for the self-help group for the hard of hearing in the district of Borken

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Lecture on March 12th, 2025, 7 p.m. at LernWerk Bocholt VHS Bocholt, Rhede, Isselburg

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1. Listening in large event spaces
2. Accessibility
3. Inductive hearing systems
4. Auracast (Bluetooth)
5. Statements from hearing aid manufacturers

Personal introduction

- Ralf Göppert, 55 years old, native of Bocholt
- Hearing status: moderately hard of hearing since birth; today - moderate to severe bilateral hearing aid wearer (high-frequency hearing loss)
- Master graphic craftsman / cartography / geodata information at the Bocholt City Administration, Real Estate and Soil Management Department
- Disability Officer for Building Matters (review of building applications for publicly accessible buildings for accessibility)
- NOT - Contact person for general disability matters, the Bocholt Senior Citizens' Office is responsible
- Spokesperson for the self-help group for the hard of hearing in the Borken district

Do you know this?

- You wear hearing aids or a cochlear implant and attend a lecture, church or concert.
- Once you are there, you realize that despite the loudspeaker, you can hear the speaker but cannot understand him or only very poorly.
- The speakers sound distorted, the room is reverberant (church) and the background noise covers up the speaker you want to understand.
- You are frustrated because you have invested a lot of money in a high-quality hearing system and yet feel excluded from the event.

Why is this?

- The speaker speaks into his microphone.
- The loudspeakers that fill the room with sound have distortion (1).
- The sound level decreases with distance from the loudspeakers (2).
- In addition, the sound is reflected on walls, ceiling, etc. (3) and thus superimposed.
- Your hearing system uses very small microphones (4) to pick up the useful sound together with the ambient noise (5) and amplifies both according to your personal hearing loss.

Why is this?

- People with hearing loss have only limited or no spatial hearing. (6)
- People with good hearing can easily filter out reverberation, echo and background noise from the building's technical equipment and the audience that comes from a different direction or distance than the direct sound and can understand the speaker well despite the background noise.
- Directional hearing requires the high frequencies, which are particularly affected by most hearing loss.
- That's why people with hearing loss hear a mush of sound that they have to analyze with great effort - and that is stressful and relatively rarely successful.

The result

- No matter how well adjusted your hearing system is, the sum of these distorting influences leads to unsatisfactory speech understanding.
- Even adjusting the volume in the hearing system does not lead to any improvement, as the background noise/distortion is also amplified.
- You get tired of listening after a short time.
- You leave the event because you can no longer stand the “noise” or unfortunately you don’t go at all.

You're angry, right?

An example (from Norbert L. Muth)

The pastor/minister speaks from the pulpit, "Bread and wine belong to Holy Communion." Before he says the word wine, a mother says " **Shh !!!** " to her child. Both the hearing-impaired and the hearing-impaired hear the **"sh" sound** simultaneously. The hearing-impaired person recognizes the other direction and automatically separates it out. The hearing-impaired person, however, hears the word **"pig" instead of "wine** . "

The **person with good hearing** knows he's in church and they're talking about Holy Communion. He recognizes that the "sh" was a **distracting** noise, filters it out, and the correct word **"wine"** remains.

The hard-of-hearing person begins a thought process. If the **hard-of-hearing person were** a Muslim attending a friend's wedding, he would stick with **pork** , because it's clear to him that Christians have no problem with pork and eat pork for communion.

This example shows that understanding for the hard of hearing is much more about interpretation and guessing.

Accessibility

- In the public eye, accessibility is mostly perceived (exclusively) as Accessibility for people with mobility impairments.
- Wheelchair users need ramps, elevators, sufficient door widths, movement spaces, disabled toilets, etc.
- However, there are other groups whose interests are entitled to be taken into account within the framework of building regulations (new construction and significant renovation).
- People with visual impairments, for example, need tactile guidance systems and Labels as well as good contrast.

Accessibility

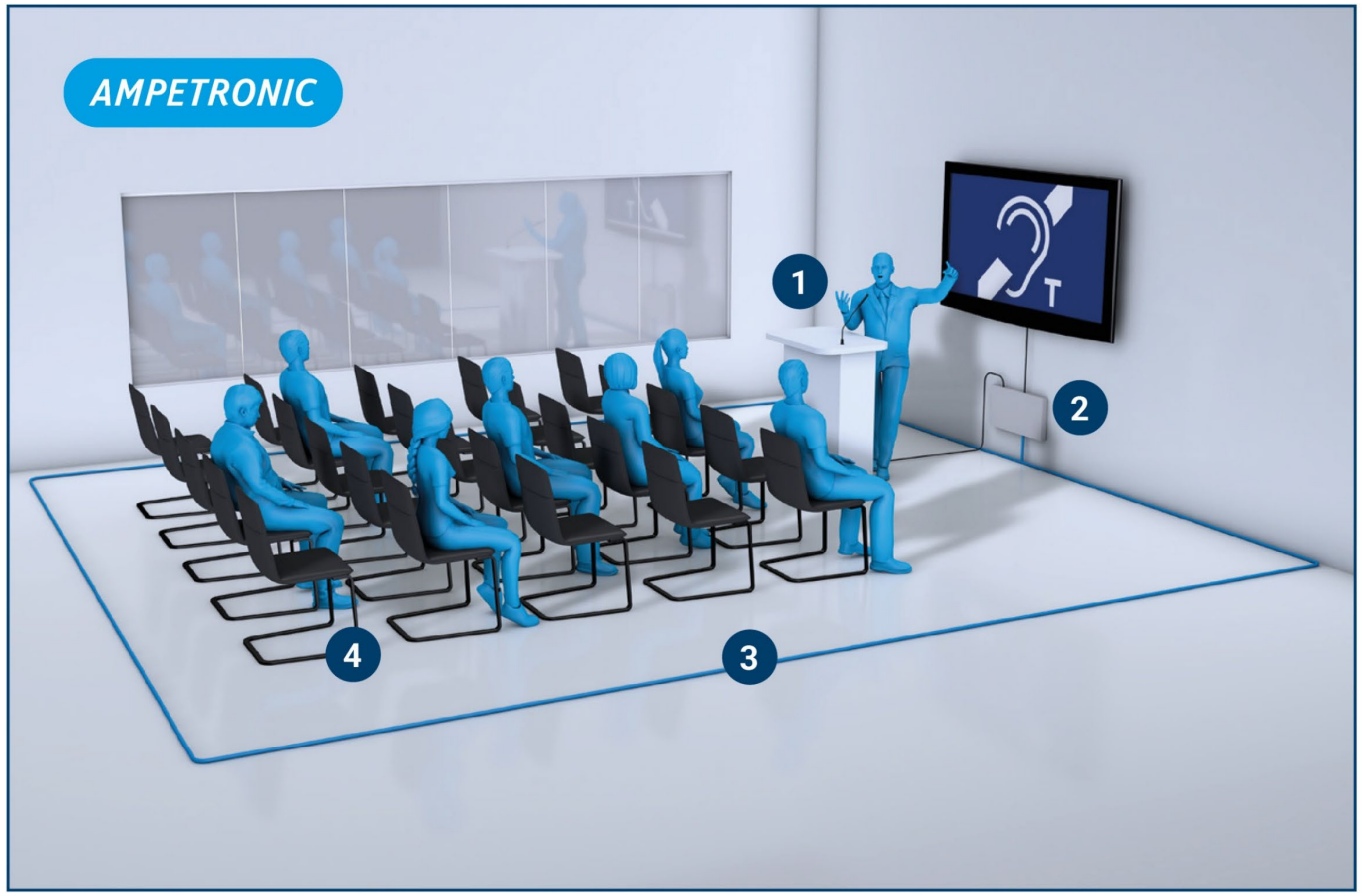
- People with cognitive disabilities need logical labeling and explanations in simple language
- Deaf people communicate with each other using sign language (DGS) and need sign language interpreters for important appointments. DGS has a completely different structure (grammar) than spoken language. Deaf people are usually very good at reading the lips and can also learn to speak in spoken language, but sign language is easier for them.
- People with hearing impairments communicate using normal spoken language. Almost no one with hearing impairments knows sign language. Can we expect a 70-year-old woman who has now become hard of hearing to learn sign language? And where should she use the signs: in the bakery? At the supermarket checkout? Or should family, relatives, friends, neighbors, etc., also be required to learn sign language?

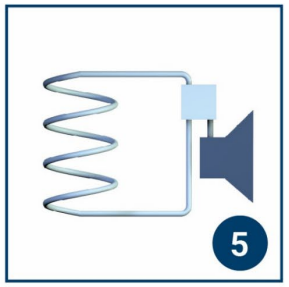
No, people with hearing loss need other aids.

People with hearing impairments

- People with hearing impairments (hard of hearing) require good room acoustics in communication rooms, for example through soundproof ceilings and sound-absorbing elements (upholstered furniture, curtains, carpets, etc.).
- Event spaces are often difficult to accommodate, as they require smooth floors for cleaning and minimal furniture for fire safety reasons. At the same time, they are usually large and should offer good speech intelligibility throughout.
- Is it still possible to make event spaces accessible for people with hearing impairments?

Yes, with inductive hearing systems





1. Sound source (microphone)
2 . Induction loop amplifier
3. Hearing loop cable
4. Person(s) with hearing aid/CI
5. T-coil in the hearing aid / CI
6.+7. Sound transmission directly into the ear

The microphone not only transmits the speech to the loudspeakers, but also, via a special amplifier, feeds it into an induction loop (also called a ring loop) installed in the room. This consists of a special cable that is usually laid in the floor or along the edge of the floor according to a predefined pattern.

How does the T-coil work?

- The T-coil in the hearing aid / CI receives the electromagnetic field emitted by the induction loop with the speech or music signals picked up in the immediate vicinity of the sound source.
- It is therefore crucial that the hearing aid / CI has a **telephone coil** , which **is activated by the acoustician (free of charge) and** switched **on by the hearing aid wearer on the device or remote control** or the **mobile phone app** in the event hall .
- Thanks to the integrated T-coil, the hearing aid receives speech and music **directly** from the loop, **without disturbing ambient noise** or loss of quality due to airborne transmission. This enables **clear, interference- and reverberation-free sound reproduction** in excellent quality, regardless of the distance to the sound source. Within the loop range, the **volume remains constant** , providing a relaxed and effortless listening experience.

Foto © Hearing Loss Association of America

Advantages of inductive technology (1)

- Accessible means that the person concerned can switch to inductive hearing independently - without having to contact the organizer.
- Robust technology used since 1930
- High acceptance among the hearing impaired
- Also available for free hearing aids
- Can be used practically always without a mobile device (mobile phone) (there are only a few hearing aids/CIs that do not have control buttons).
- Even older people can cope well with it after some explanation and instruction, even if they have early-stage multiple sclerosis.
- The German Association of the Hard of Hearing recommends inductive technology.

Advantages of inductive technology (2)

- It may also be possible to make phone calls using the T-coil program (on all handsets “on the line”).
- Any hearing system with a T-coil can be inductively connected to any headphone output (e.g., TV/cell phone/MP3 player/stereo system) using a neck loop (approx. € 50). Sometimes only a small adapter is needed.
- Rooms can be inexpensively equipped with a loop and amplifier

Disadvantages of inductive technology

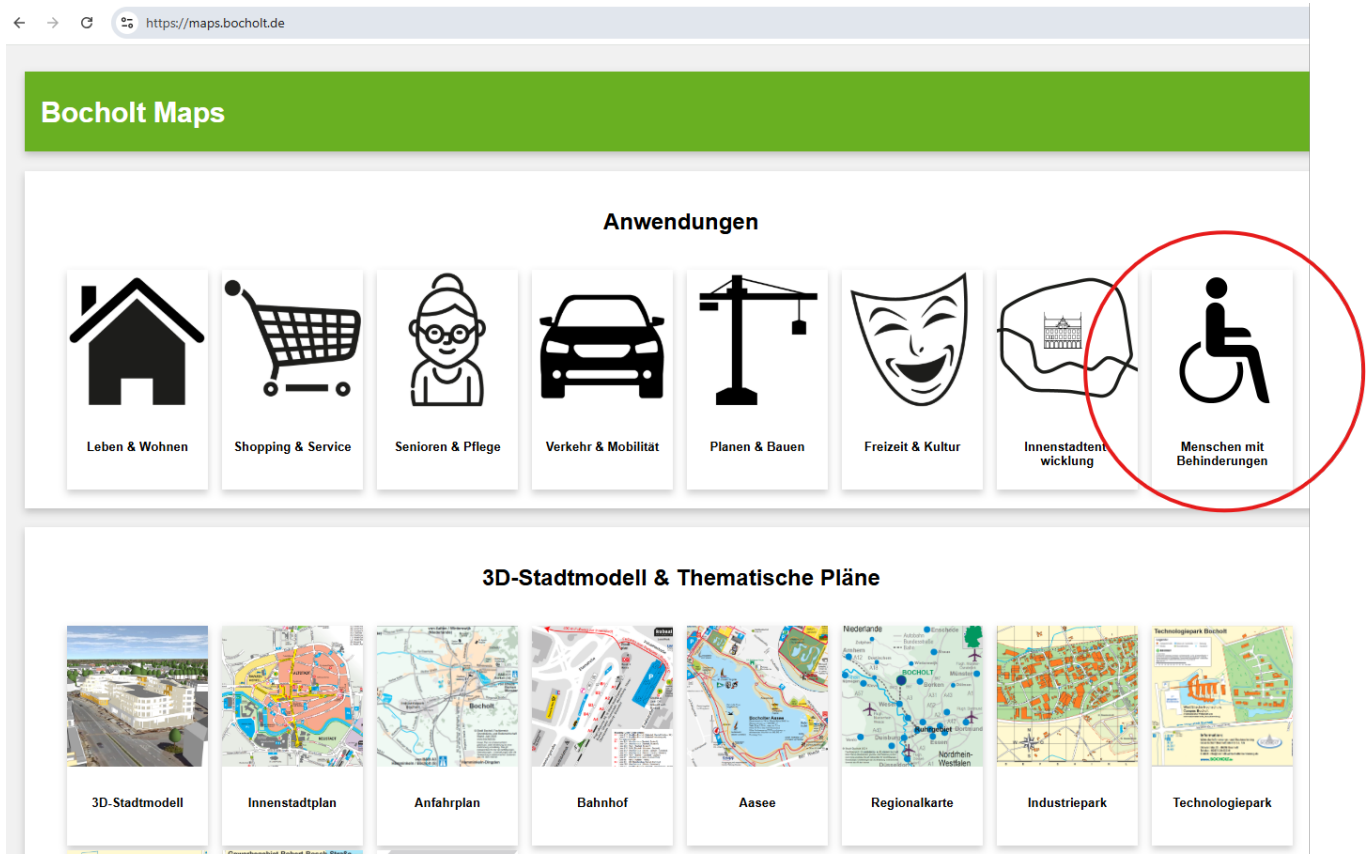
- A loop with amplifier must first be installed (ideally during the construction / renovation of an event hall).
- If installed temporarily, the cable must be positioned in such a way that it does not pose a tripping hazard. Therefore, it cannot be placed freely in the middle of the room.
- Interference from electromagnetic sources (fluorescent tubes, LED lights, dimmers, high voltage) is possible.
- Very small hearing aids often don't include a T-coil due to limited space. **When purchasing, make sure you get one with one.**

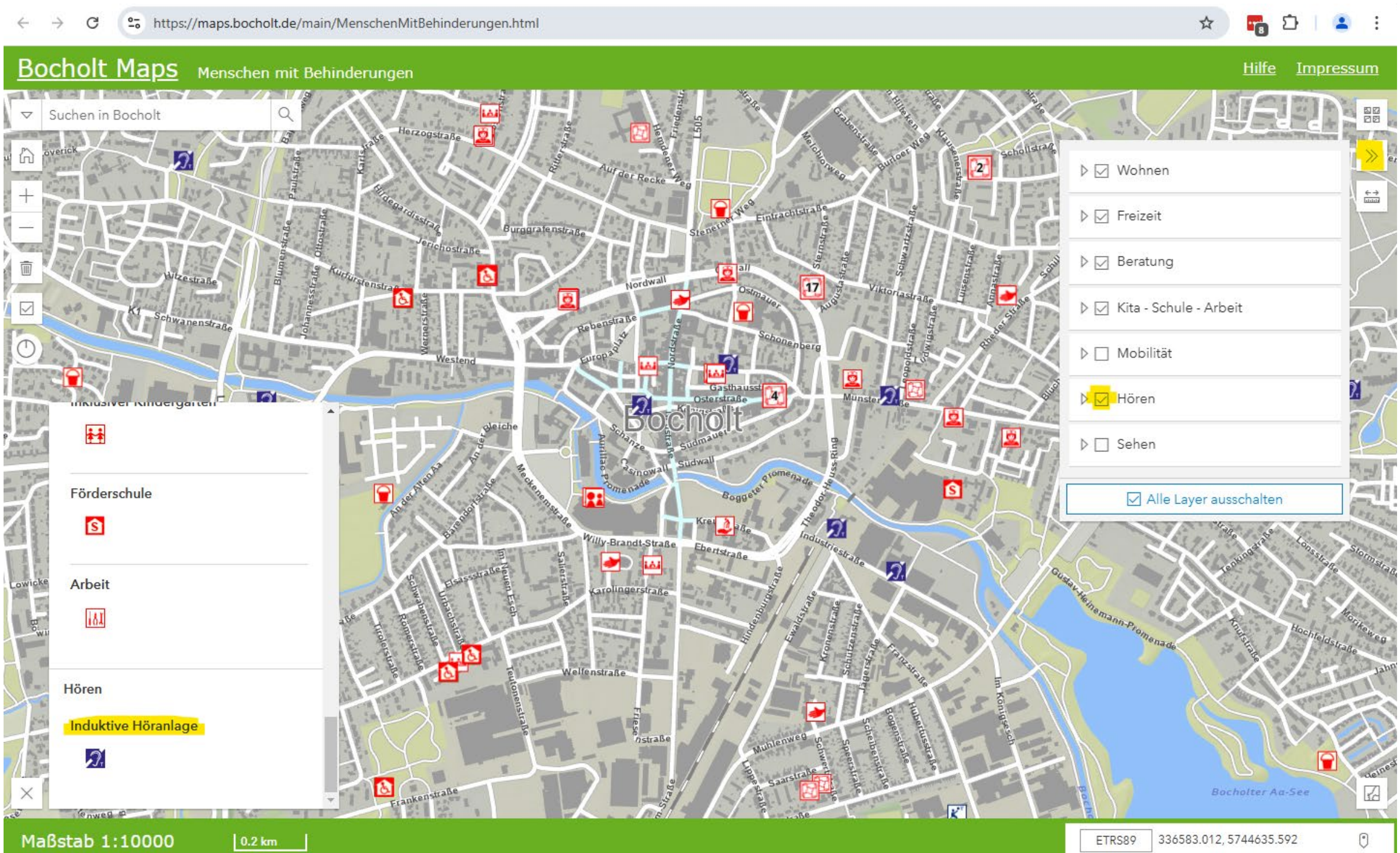
How does the city of Bocholt support people with hearing impairments

- As part of the building permit process, accessibility is assessed and soundproofing requirements are imposed (acoustic ceilings, etc.).
- An inductive loop system is installed during new planning and renovation of event spaces (e.g., LernWerk , Theatersaal, Liederner Saal) .
- On July 15, 2019, all hearing care professionals in Bocholt, Rhede, Borken, and Hamminkeln were informed that the city of Bocholt will be installing inductive hearing systems in the future and that the hearing care professionals were asked to take this into account when fitting hearing aids and, if necessary, to inform their customers of the consequences of a missing induction coil.

Where can I find offers for people with disabilities

- maps.bocholt.de



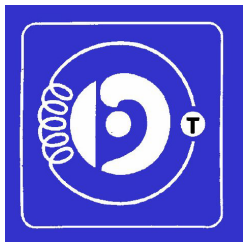

https://maps.bocholt.de/main/MenschenMitBehinderungen.html
Bocholt Maps
Menschen mit Behinderungen
Hilfe
Impressum
Suchen in Bocholt
Wohnen
Freizeit
Beratung
Kita - Schule - Arbeit
Mobilität
Hören
Sehen
Alle Layer ausschalten
Förderschule
Arbeit
Hören
Induktive Höranlage
Bocholt
Maßstab 1:10000
0.2 km
ETRS89
336583.012, 5744635.592

Where can I find inductive hearing systems in Bocholt?

- LernWerk, Industriestraße 1,
  Event Hall 1.01. The small hall 3.01 is equipped with a ring loop.
- Cultural venue “Alte Molkerei”, Werther Straße 16
- LWL Industrial Museum, TextilWerk, Spinnerei, Drosselsaal, Industriestraße 5 (Synexis RP8 pocket receivers can be borrowed free of charge at events [against ID deposit], which transmit sound inductively throughout the entire room.)
- Theater hall and multifunctional hall, Berliner Platz 1 after the complete renovation
- Liedern Clubhouse (Liederner Hall), Am Hagelkreuz 1
- Catholic churches
  (mostly in the front five to ten rows, some signposted):
  St. George's Church, St. Norbert's Church, Church of Our Lady, St. Helena's Church, St. Paul's Church, St. Bernhard's Church, St. Ludgerus' Church, Mary the Comforter Church
- Protestant churches:
  Christ Church, Apostle Church

And, of course, in other places around the world.

Look out for these signs!



Induction – a dying technology?

- When advising on a hearing system, it is often assumed that the inductive technology will be replaced by Bluetooth or Auracast and that a T-coil will therefore be unnecessary.
- Bluetooth is a good technology for connecting your mobile phone or TV, for example.
- Auracast, a further development of the Bluetooth format, is in its first steps.

What is Auracast ?

- Auracast is a new Bluetooth technology that allows for a type of Bluetooth broadcast that can be heard by anyone who owns and can operate a technically compatible device, such as Auracast headphones, a hearing aid, or a cochlear implant. Broadcasting is not possible with existing Bluetooth.
- Auracast is currently being promoted as a replacement for induction technology.
- However, all old hearing aids are not compatible and cannot use Auracast.

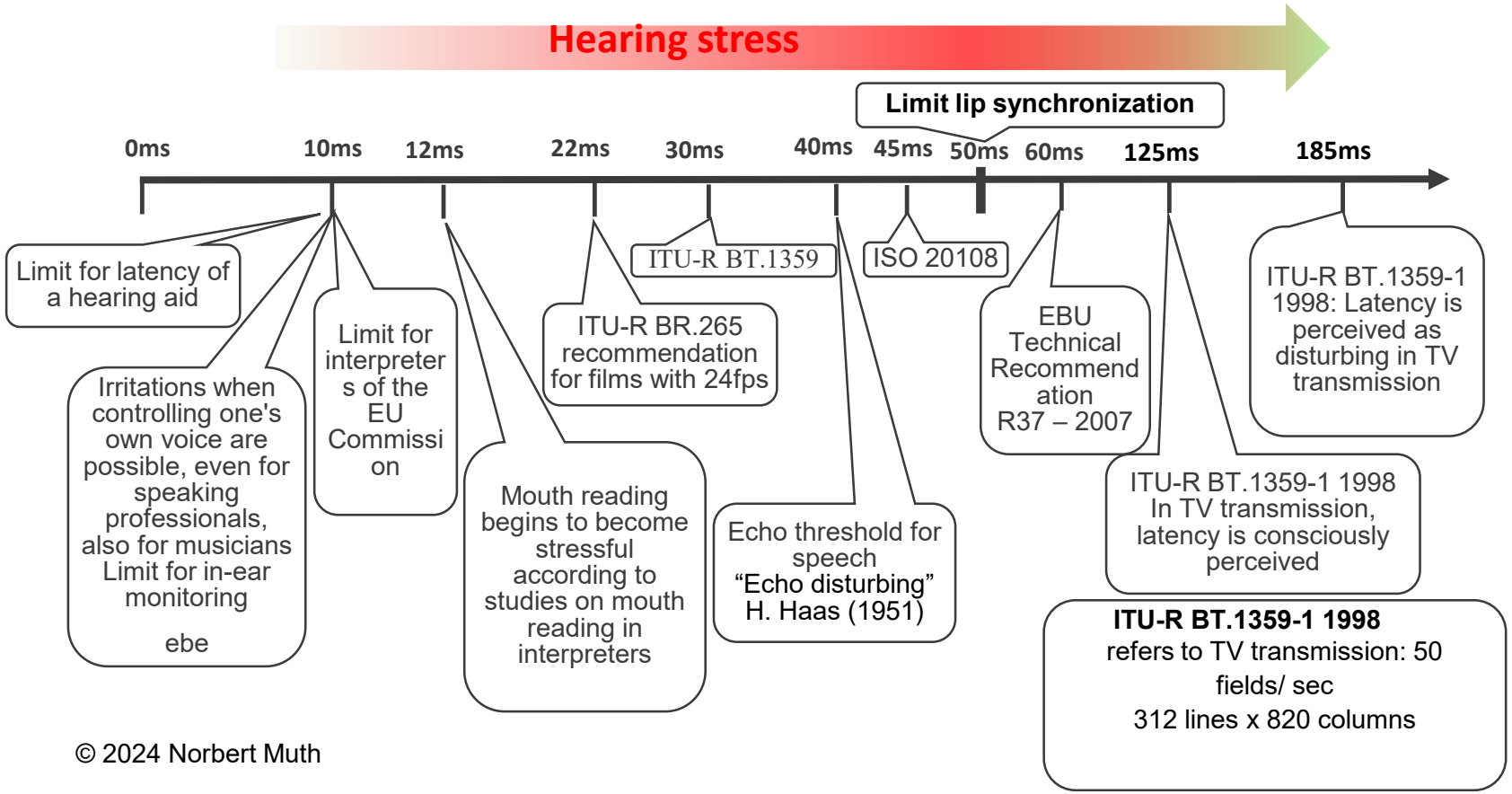
Advantages of Auracast

- No installation of inductive loops necessary; however, transmitters are required
- Multiple channels can be broadcast simultaneously (currently only two channels are possible with the only professional broadcaster – hardware and/or software limitations)
- No interference from electromagnetic fields (however, interference from other Bluetooth devices, Wi-Fi, home automation, microwaves and anything containing water or moisture is possible)
- Stereo transmission (not relevant for people with severe hearing loss)
  If you choose stereo for headphones for people with good hearing, the only professional transmitter cannot serve people with hearing loss because it only has two channels: either stereo or mono for headphones and hearing aids. Two transmitters would then be required.

Why is Auracast not accessible?

- Auracast has a digital compulsion due to the absolute necessity of a smartphone (which you must also be able to use properly)
- Auracast has a latency (time delay) of 34 to 80 ms, which means that the sound arrives in the hearing system about one syllable late, making it difficult to read from the mouth and synchronize with, for example, a healthy ear.
- Hearing aids with Auracast will be more expensive. Auracast is not covered by health insurance and is therefore socially exclusive.
- Today, claims for new hearing systems only exist after at least 6 years, often longer.
- Not compatible with existing Bluetooth hearing aids. Not retrofittable.
- It is not the first technology to replace inductive hearing systems.
- The Chaos Computer Club has discovered that it is possible to replace an official broadcaster with a fake one without much difficulty.

Latency sound after picture (graphic © Norbert L. Muth)



Latency always means greater auditory stress, because when mouthing, the visual information must be synchronized with the auditory information. This becomes more complex and strenuous the longer the latency and the poorer the acoustic information - in other words, the more hard of hearing one is.
This increases auditory stress. And if the letter seen doesn't match the letter heard, the brain intervenes and invents a third letter (the McGurk effect).

Conclusion

- Auracast is **not accessible and cannot replace** the T-coil .
- Auracast is an additional technology for specific purposes, even for people with good hearing who are tech-savvy.
- Inductive hearing system technology must therefore continue to be the **basic technology for low-threshold, barrier-free basic care** for the hearing impaired.

Which hearing aid manufacturers offer T-coils?

My email of 6.2.2025 to hearing aid providers

Ladies and Gentlemen

As the disability representative for building matters in the city of Bocholt, I am committed to equipping event rooms with inductive hearing systems.

On March 12, I will give a public lecture on the topic of inductive hearing systems. I will also publish my findings in "Forum," the nationwide magazine for self-help groups for the hearing impaired.

Can you send me an overview of your hearing aid models / cochlear implants that have a T-coil installed.

I would also be very interested to know whether you have inductive receivers as accessories that enable hearing aids/cochlear implants that do not have a T-coil to use inductive hearing systems.

Kind regards

Ralf Göppert

Statements from hearing aid manufacturers on induction

- **Sonova** : (Phonak, Unitron, Hansaton, Sennheiser (headphone division), Advanced Bionics, Geers)
- **Demant** : (Oticon, Bernafon, Philips (hearing aids), Sonic, various hearing aid stores operating under their own name)
- **WSAudiology** : (Sivantos + Widex + Audibene, Signia, Horizon, Rexton, AudioService)
- **ReSound GN** : (GN Hearing, alliance with Cochlear, Jabra)
- **Starkey**

Sonova : (Phonak, Unitron, Hansaton, Sennheiser (headphone division), AdvancedBionics, Geers)

Dear Mr. Göppert,

Thank you very much for the pleasant call. We are pleased to confirm that we will, **of course, continue to carry hearing systems with integrated T-coils in our product range**. We are **aware of how important this support is for people with hearing impairments,** and that a connection to inductive hearing systems is a great help for participating in public life.

Best regards

Your Sonova Team

Sonova Deutschland GmbH,
Max-Eyth-Str. 20, 70736 Fellbach-Oeffingen, Germany

Bernafon

Dear Mr. Göppert,

Since inductive connection to accessories is currently a good method for directly controlling a wide variety of models and manufacturers in public facilities such as theaters, cinemas, churches, etc., **most of our products are equipped with T-coil functionality** .
Listed below are the hearing aids in our current portfolio with T-coil functionality:

Encanta 400/300/200/100 in the MNR design

Alpha XT 9/7/5 in the models MNR TR, MNR T, MNB T and MNB TR

Alpha 9/7/5/3/1 in the designs MNR TR, MNR T, MNB T, MNB TR and in the ITE area optionally available for the designs ITE and ITC

Entra A1/A2 in the designs B 105, MNR T and in the ITE area can be ordered optionally for the designs ITE and ITC

Viron 9/7/5/3/1 in the designs B105, MNR T and MNR TR

Leox 7/3 (WHO 4 hearing aids) in SP and UP designs

In addition to the explanation of the designs:

MNR T R = **MNR** for external receiver, **T** for the coil and **R** for rechargeable, i.e. battery technology.

MNB T and B105 are behind-the-ear hearing aids with a fixed angle, convertible to a thin tube system.

MNB T R = MNB abbreviation for mini Behind the Ear, meaning small BTE, **T** for the coil and **R** for Rechargeable, meaning battery technology.

The numbers that accompany the hearing aid family name indicate the technical features. The higher the number, the higher the technology level.

Our accessories connect via Bluetooth.

Sincerely,

Your Bernafon Team

Bernafon Hearing Aids GmbH, Germany, 12277 Berlin

Widex

SOUND LIKE NO OTHER

Dear Mr. Göppert,

thank you for your inquiry. I would like to assist you:
The Federal Disability Equality Act stipulates the consideration of inductive systems in the construction industry (according to DIN **EN 60118-4**).

Widex offers **hearing systems with inductive reception technology (T-coil)**

in all price categories (free entry-level hearing systems up to premium first-class). The following Widex models contain an integrated T-coil:
MOMENT RIC 312 D
MOMENT BTE RD
MOMENT BTE 13 D
MOMENT XP 312
MAGNIFY RIC 312 D
MAGNIFY BTE RD
MAGNIFY BTE 13 D
MAGNIFY XP 312

Other Widex models can receive the inductive audio signal using accessories (Widex Sound Assist):
MOMENT RIC 312 D
MOMENT sRIC RD
SMART RIC RD
MAGNFY mRIC RD

If you have any questions, please do not hesitate to contact me.

Sincerely,

Manuel,
Dept. of Hearing Acoustics,

Widex Hörgeräte GmbH,
Albstadtweg 6,
70567 Stuttgart

GN ReSound

Dear Mr. Göppert,

Thank you for your inquiry and your commitment as a representative for the concerns of people with disabilities. We currently offer two solutions for hearing aid wearers to use inductive loop systems.

Built-in T-coil in the hearing system . A T-coil is integrated in the following models:

- ReSound Savi SA262-DRW
- ReSound Key 62-DRW
- ReSound Key 67-DRW
- ReSound Key 77-DWT
- ReSound Key 88-DWHT
- ReSound Key 98-DWT
- ReSound Nexia NX 88-DWC
- ReSound Nexia NX 77-DWC

All ReSound Key individually manufactured hearing systems (Ido) in the ITC (ear canal device) or ITE (full or half concha) design.

All wireless- enabled hearing aids without an integrated T-coil can be connected to our Multi Mic / Multi Mic + . These external microphones have a built-in T-coil, automatically connect to inductive transmitters, and transmit the signal wirelessly to the hearing aids.

In the attached product overview, starting on page 20, you can see compatibility with an integrated T-coil in our current portfolio. Details on the external microphone (MultiMic / MultiMic +) can be found here: ReSound Multi Mic – Hearing Aid Microphone | ReSound Germany

Best regards from Münster

Sebastian Wilbrand, GN Hearing GmbH | Product Management | An der Kleimannbrücke 75 | 48157 Münster

Starkey

Dear Mr. Göppert,

Thank you for your inquiry and your commitment to accessible hearing in event spaces. This topic is also very important to us, which is why we are constantly working to provide innovative solutions for people with hearing impairments.

Our current hearing systems from the **Edge AI series** – **RIC RT** and **ITE R** – as well as our **Evolv AI series** – **BTE R, BTE 13 and BTE P+, RIC R, ITE R** – have an integrated T-coil and are therefore ideally suited for use with inductive hearing systems.

Remote Microphone + accessory , which was developed for the **Genesis** and Evolv AI series and allows connection to the T-coil. This allows these hearing systems to also use inductive loops.

I recommend you familiarize yourself with **Bluetooth Auracast™, as this new technology will completely replace the classic T-coil in the near future.** Auracast ™ over Bluetooth LE Audio offers numerous advantages for hearing aid wearers: ...

Julian Schoeneich, Engineer (B.Sc.), Product Manager | Starkey , 22335 Hamburg

Modell	Technikstufe	Bauform
Edge AI	Technikstufe 24	Bauform RIC RT
Edge AI	Technikstufe 20	Bauform RIC RT
Edge AI	Technikstufe 16	Bauform RIC RT
Edge AI	Technikstufe 24	Bauform ITE R
Edge AI	Technikstufe 20	Bauform ITE R
Edge AI	Technikstufe 16	Bauform ITE R
Genesis AI	Technikstufe 24	Bauform RIC RT
Genesis AI	Technikstufe 20	Bauform RIC RT
Genesis AI	Technikstufe 16	Bauform RIC RT
Genesis AI	Technikstufe 12	Bauform RIC RT
Genesis AI	Technikstufe 24	Bauform ITE R
Genesis AI	Technikstufe 20	Bauform ITE R
Genesis AI	Technikstufe 16	Bauform ITE R
Genesis AI	Technikstufe 12	Bauform ITE R
Evolv AI	Technikstufe 2400	Bauform RIC R
Evolv AI	Technikstufe 2000	Bauform RIC R
Evolv AI	Technikstufe 1600	Bauform RIC R
Evolv AI	Technikstufe 1200	Bauform RIC R
Evolv AI	Technikstufe 1000	Bauform RIC R
Evolv AI	Technikstufe 2400	Bauform ITE R
Evolv AI	Technikstufe 2000	Bauform ITE R
Evolv AI	Technikstufe 1600	Bauform ITE R
Evolv AI	Technikstufe 1200	Bauform ITE R
Evolv AI	Technikstufe 1000	Bauform ITE R
Evolv AI	Technikstufe 2400	Bauform HdO
Evolv AI	Technikstufe 2000	Bauform HdO
Evolv AI	Technikstufe 1600	Bauform HdO
Evolv AI	Technikstufe 1200	Bauform HdO
Evolv AI	Technikstufe 1000	Bauform HdO
Evolv AI	Technikstufe 2400	Bauform HdO R
Evolv AI	Technikstufe 2000	Bauform HdO R
Evolv AI	Technikstufe 1600	Bauform HdO R
Evolv AI	Technikstufe 1200	Bauform HdO R
Evolv AI	Technikstufe 1000	Bauform HdO R
Evolv AI	Technikstufe 2400	Bauform HdO P+
Evolv AI	Technikstufe 2000	Bauform HdO P+
Evolv AI	Technikstufe 1600	Bauform HdO P+
Evolv AI	Technikstufe 1200	Bauform HdO P+
Evolv AI	Technikstufe 1000	Bauform HdO P+

Oticon

Dear Mr. Göppert,

Thank you for your email. **The use of Oticon hearing systems with inductive loops is a key issue for us, even in the age of Bluetooth, to enable barrier-free hearing.**

It is currently available as a function (T-coil) in 42 hearing systems (depending on the design).

Oticon via Bluetooth (2.4 GHz) as an option. The **EduMic** then offers the option of using inductive hearing systems and **transmitting the signal to the hearing systems via Bluetooth** .

You can also find out which hearing system families and designs make this possible on the following website:

https://www.oticon.de/hearing-aid-users/hearing-aids/products/all?filters=telecoil:true

Oticon hearing system families offer one or more options:

Oticon Intent, Oticon Real, Oticon More, Oticon Zircon, Oticon Jet PX, Oticon Ruby, Oticon Jet, Oticon Own, Oticon Xceed, Oticon Xceed Play, Oticon Play PX, Oticon Play

I hope this helps you and I am happy to answer any further questions you may have.

Kind regards

Björn Feist, Oticon GmbH, Offakamp 7-9b, 22529 Hamburg

Signia

Dear Mr. Göppert,

Thank you for your inquiry. We offer hearing aids with T-coils in various models and performance classes.

Yesterday, we launched our newest hearing aid model, the Pure Charge&Go BCT IX with T-coil. It's available in five different power levels and 10 colors.

We currently offer **57 hearing aid models in six designs with T-coils**. We do not offer additional receivers or cochlear implants.

Sivantos GmbH
MK GMC DE PMK, Henri-Dunant-Str. 100, 91058 Erlangen, Germany

Aktuelle Signia Hörgeräte mit T-Spule
25. Feb 25

RIC Hörgeräte (mit externem Lautsprecher)
Pure Charge&Go BCT 7IX
Pure Charge&Go BCT 5IX
Pure Charge&Go BCT 3IX
Pure Charge&Go T 7IX
Pure Charge&Go T 5IX
Pure Charge&Go T 3IX
Pure Charge&Go T 2IX
Pure Charge&Go T 1IX
Pure Charge&Go T 1AX

Hinter-dem-Ohr-Hörgeräte
Motion Charge&Go P 1X
Motion Charge&Go P 2X
Motion Charge&Go P 3X
Motion Charge&Go P 5X
Motion Charge&Go P 7X
Motion Charge&Go SP 1X
Motion Charge&Go SP 2X
Motion Charge&Go SP 3X
Motion Charge&Go SP 5X
Motion Charge&Go SP 7X
Intuis M 4.0
Intuis M 4.1
Intuis M 4.2
Intuis M 4.3
Intuis M 4.5
Intuis M 4.7
Intuis P 4.0
Intuis P 4.1
Intuis P 4.2
Intuis P 4.3
Intuis P 4.5
Intuis P 4.7
Intuis SP 4.0
Intuis SP 4.1
Intuis SP 4.2
Intuis SP 4.3
Intuis SP 4.5
Intuis SP 4.7

Im-Ohr-Hörgeräte je nach Ausstattungswunsch
Insio 1IX ITC
Insio 2IX ITC
Insio 3IX ITC
Insio 5IX ITC
Insio 7IX ITC
Insio 1IX ITE
Insio 2IX ITE
Insio 3IX ITE
Insio 5IX ITE
Insio 7IX ITE

Insio 1Nx ITC	Bis 31.5.2024
Insio 2Nx ITC	Bis 31.5.2025
Insio 3Nx ITC	Bis 31.5.2026
Insio 5Nx ITC	Bis 31.5.2027
Insio 7Nx ITC	Bis 31.5.2028
Insio 1Nx ITE	Bis 31.5.2029
Insio 2Nx ITE	Bis 31.5.2030
Insio 3Nx ITE	Bis 31.5.2031
Insio 5Nx ITE	Bis 31.5.2032
Insio 7Nx ITE	Bis 31.5.2033

Cochlear

Dear Mr. Göppert,

attached (see list below) are the technical data sheets for the sound processors that feature the T-coil.
Please note that the T-coil is not automatically activated for every patient.
Your fitter can check whether it has been or should be activated.

Cochlear ™ Nucleus® Kanso ™ Sound Processor (CP950)

Cochlear ™ Nucleus® 7 Sound Processor (CP1000)

Cochlear ™ Nucleus® 8 Sound Processor (CP1110)

Cochlear ™ Nucleus® CP910 Sound Processor.

The Kanso 2 does not have a T-coil, but the MiniMicrophone 2+ can be used as an induction loop to still utilize the T-coil.

Ann-Solène Lépinay,
Customer Service Team Coordinator

Cochlear Deutschland GmbH & Co. KG, Mailänder Straße 4 a, 30539 Hannover, Germany

Med-el Cochlear Implants

Dear Mr. Göppert,

Thank you for your message. I would be happy to answer your question regarding the T-coil with MED-EL CI audio processors.

all of our CI audio processors can be connected to inductive loop hearing systems. However, depending on the type and generation of the audio processor, special accessories may be required. I've attached a detailed list of compatibility to this email.

We also offer an accessory that allows hearing aids and audio processors without a T-coil to be connected to inductive loops. The device is called Audiolink XT and allows access to the device's integrated T-coil via a Bluetooth connection.

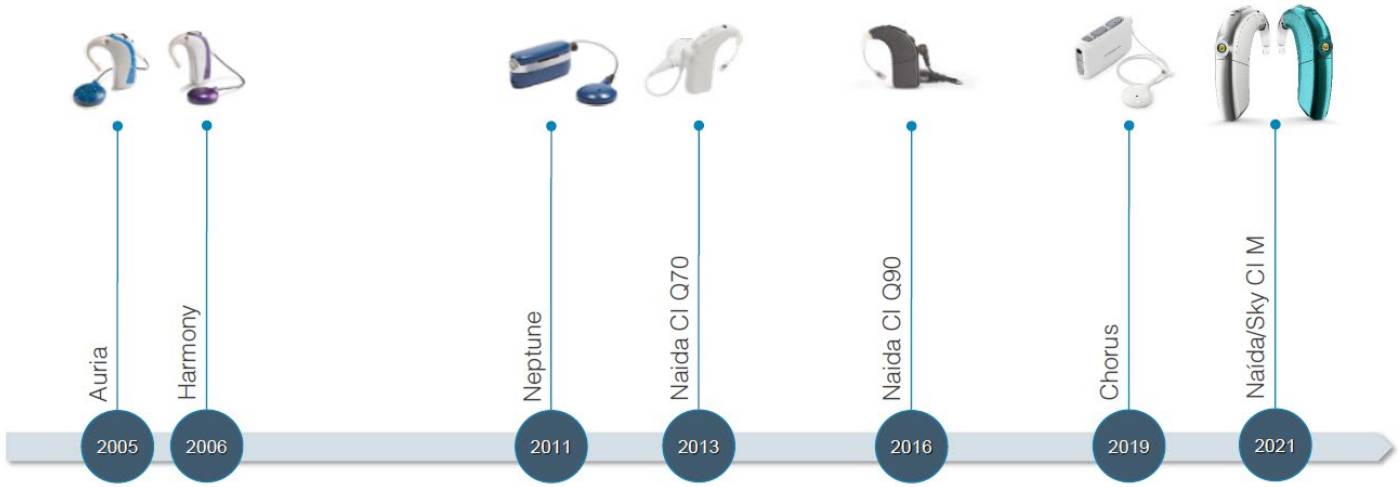
Best regards

Mario Schinnerl

Clinical Engineer, Engineering Support Team

MED-EL Electromedical Devices Germany GmbH, Moosstraße 7, 82319 Starnberg

Advanced Bionics
Cochlear implants



Dear Mr. Göppert,

Thank you for your inquiry.

All our **Advanced Bionics sound processors** that have been launched in the last 20 years **have a T-coil** and can therefore be used with appropriate induction loops.

I have enclosed an overview of these sound processors in the form of a timeline.

Best regards

Marian Kost, Product Specialist

Advanced Bionics GmbH, Max-Eyth-Straße 20, 70736 Fellbach-Oeffingen

Would you like to exchange ideas with other hearing-impaired people?

- Visit the **self-help group for the hearing impaired in the Borken district**
- Meeting every 2 months in the community center Biemenhorst, Bocholt
- **All** information on this can be found at

www.selbsthilfegruppe-schwerhoerige.de

Thanks to

I **would like to expressly thank the hearing aid manufacturers** for their extensive information.

I am grateful to
Norbert Muth , Protestant pastoral care for the hard of hearing in Württemberg, for his many suggestions and proofreading.

Thank you for your attention!

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