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ReSound ONE

Hear like no other

GN Making Life Sound Better

# Learning Outcomes

After this course learners will be able to.....

- Explain the patient benefits of All Access Directionality.
- Identify situations where Ultra Focus binaural beamforming is recommended for patients.
- Describe the improvements provided by the new M&RIE technology.
- Discuss the components of the ReSound ONE ecosystem.



GN Making Life Sound Better

## The ReSound Organic Hearing Philosophy



The ReSound sound philosophy has always been to emulate the natural hearing process as close as possible.

We call that **Organic Hearing**.

**Organic Hearing** is the foundation of our technology that leverages the individual's hearing anatomy to collect and direct sound organically to provide the brain with the most complete sound experience – even in the most challenging listening environments.

This philosophy drives our history of innovations.

# Organic Hearing



With **ReSound ONE™**, we once again will change the industry and advance our goal of providing the most organic hearing possible.



## Natural and clear sounds

Are the most important drivers in hearing aid satisfaction

You, your hearing and your life is  
unique and one of a kind

# Hear like no other

The most individualized and complete sound with  
greater clarity, direction and depth,  
you will hear like no one else



**Microphones**

ReSound GN

ReSound GN



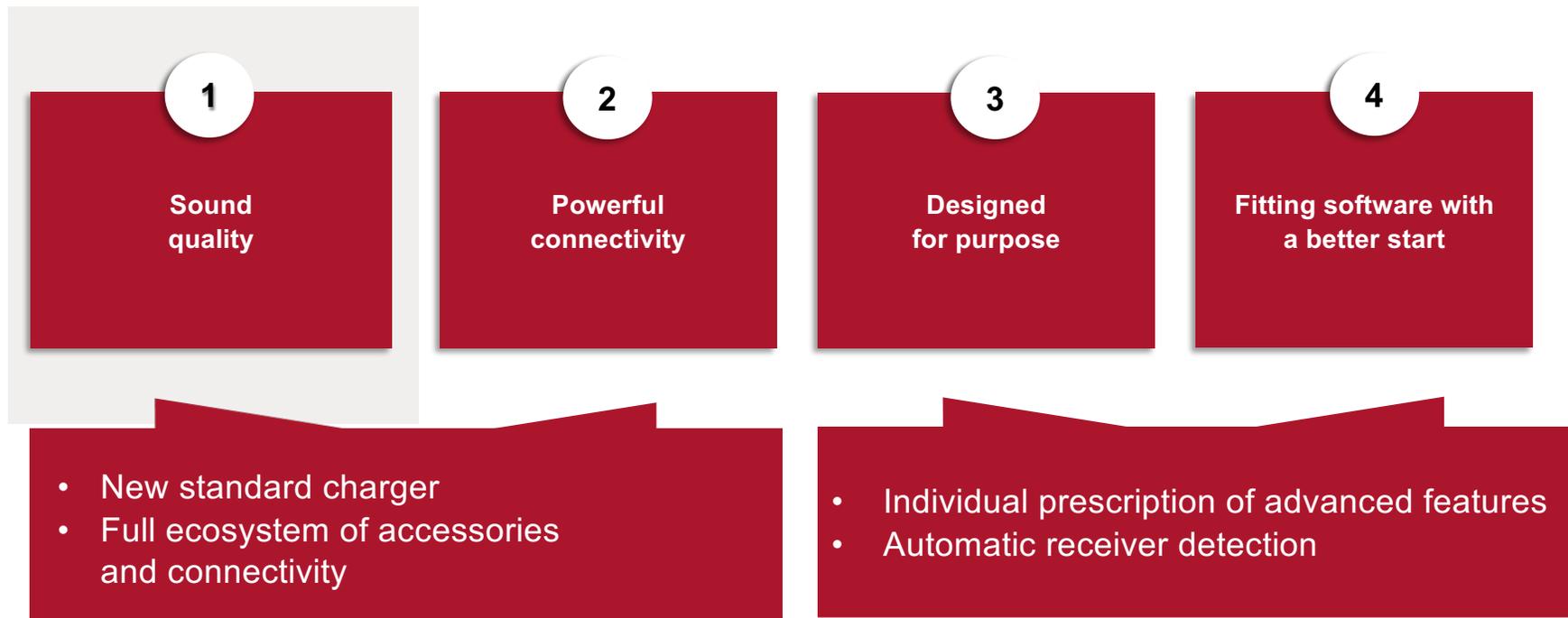
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Introducing the world's first full-featured\*  
hearing aid with M&RIE and All Access Directionality  
for a truly individualized, more complete sound  
experience



\*microphone in ear and two standard directional microphones, directionality features, wireless audio streaming

# Hear like no other



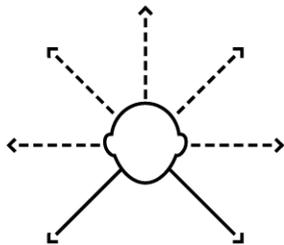
# ReSound ONE sound quality



## ALL ACCESS DIRECTIONALITY

### BENEFITS

- Automatically steering the best microphone choice for the situation.
- Enjoy conversations and sounds without being cut off from your surroundings.
- Directionality is improved by using new 4-microphone beamformer.



## ULTRA FOCUS

### BENEFITS

- Ultra Focus is a powerful binaural beamformer to help patients focus on the person in front of them in very noisy environments with up to 30% improvement in speech understanding over All Access Directionality\*.
- Confidence to hear in the most difficult situations.
- User Controlled



## M&RIE

### BENEFITS

- Spatial perception allowing sound to be separated in depth and direction improving both localization and hearing in low levels of noise.
- Wind Noise Reduction due to the location of the microphone in the ear away from the wind.
- Natural Sound Quality
- Natural Directionality



## All Access Directionality

**Automatically adjusts** directional microphone patterns so that the patient is in the **best position** to hear **what's important** and still monitor the sounds around them.

In noise, **All Access Directionality** uses a new binaural connection to create a stronger, more focused beam for sounds in front of the patient. providing up to **2dB better\* signal-to-noise ratio**.



Unique in using **weighted beamformer blending** and **multiband directionality** to provide the best possible signal to noise ratio.

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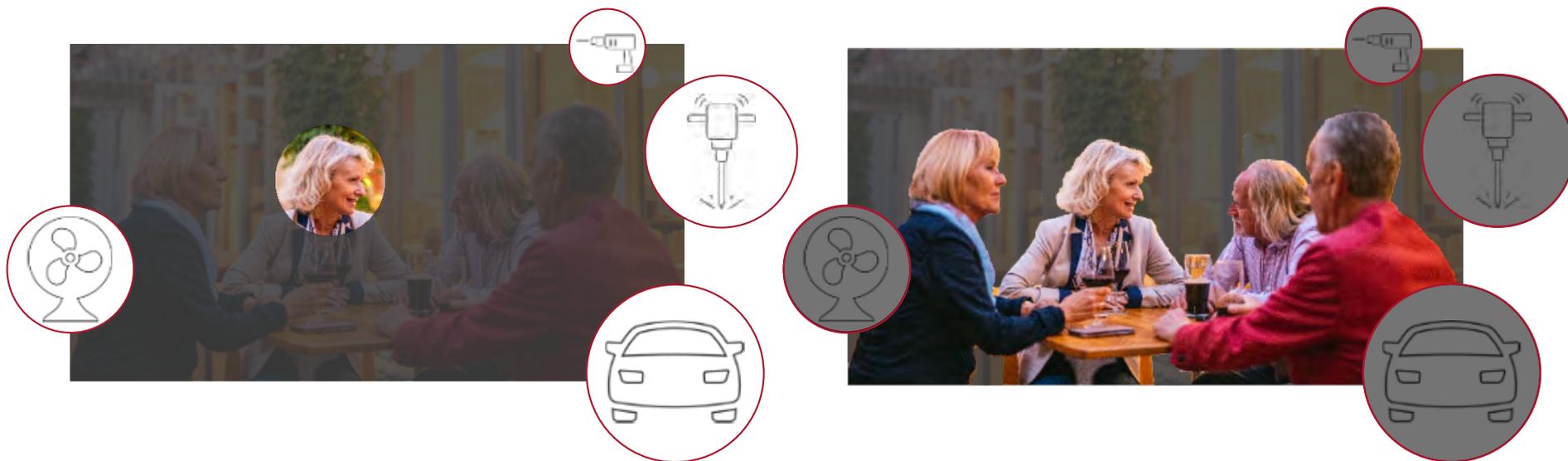
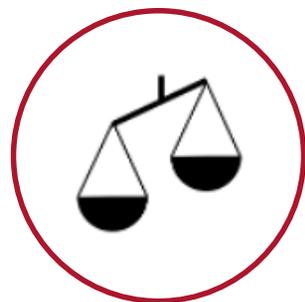
\*Compared to ReSound legacy technology



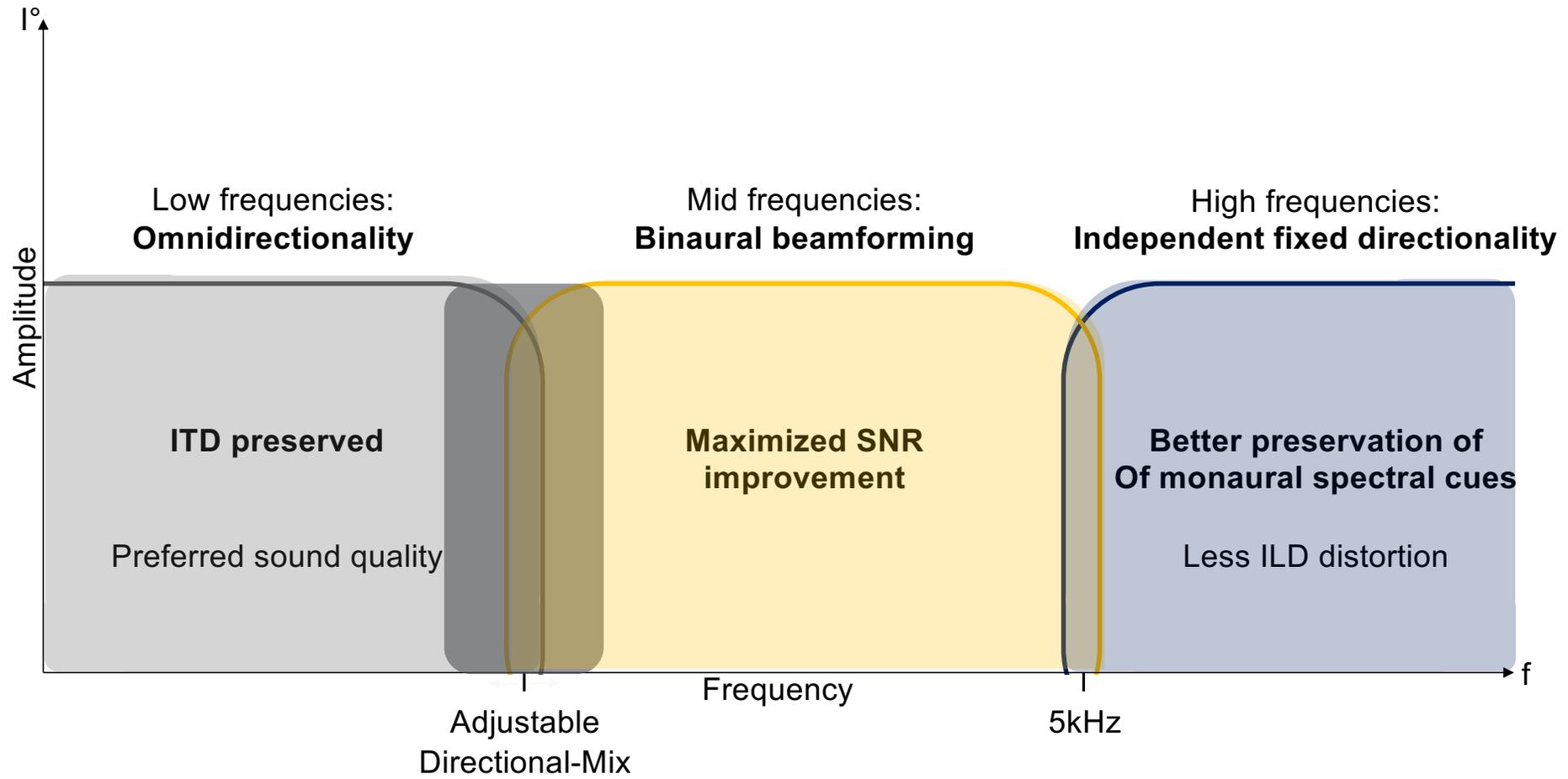
ReSound **GN**



# Weighted beamformer blending



# Multiband directional approach





Ultra Focus



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ReSound GN

## Ultra Focus

The user-controlled **Ultra Focus** uses a powerful directional pattern to focus on the person in front in very noisy environments.

By **uniquely** using the speech frequencies for targeted directionality and the high and low frequencies to monitor the environment, patients can hear speech and maintain spatial cues around them.

The outcome is a **renewed confidence** in situations which they might otherwise have avoided.

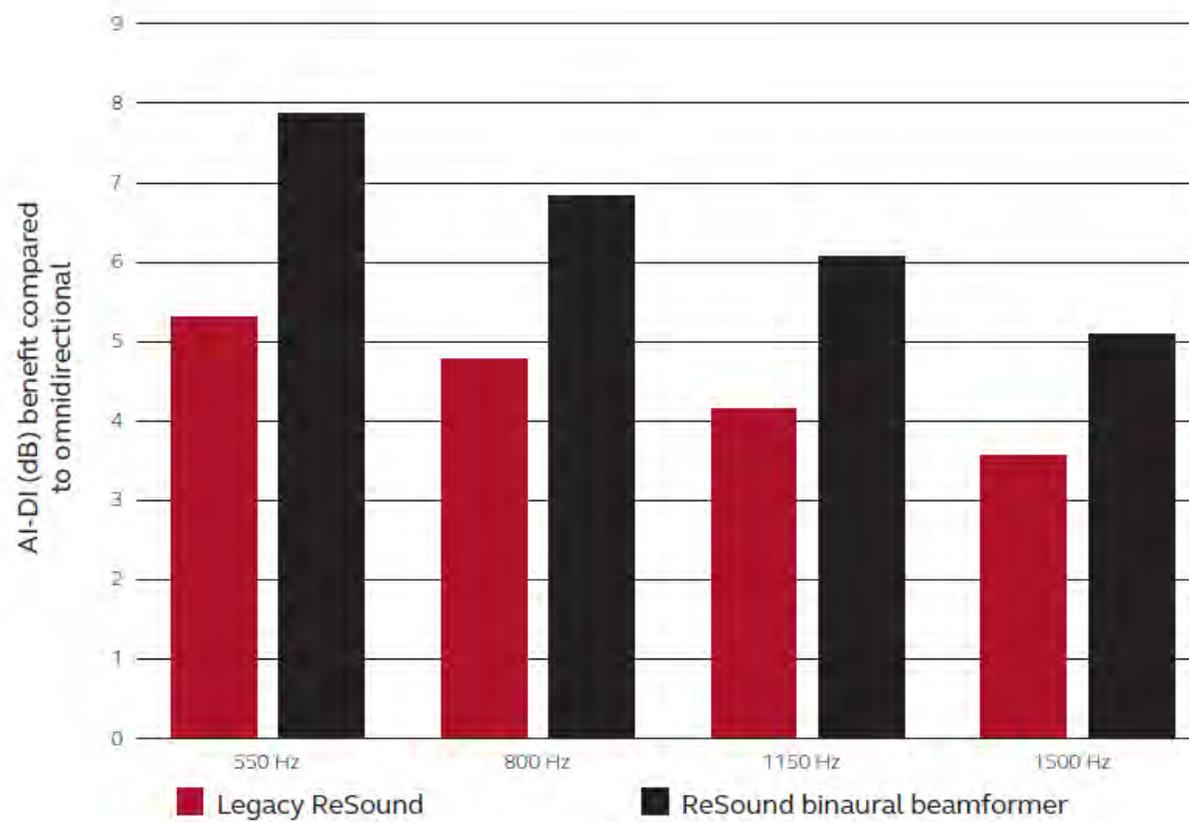
Beamformer enabled by a magnetic induction radio

1.5 dB signal-to-noise improvement when noise is louder on one side\*

30% speech understanding improvement over All Access Directionality\*

\* Groth J. (2020). The evolution of the binaural hearing strategy: All Access Directionality and Ultra Focus. ReSound white paper.

## AI-DI measurements for ReSound ONE beamformer



## M&RIE

### Microphone and Receiver-In-Ear

**M&RIE** is inspired by our organic hearing philosophy, combines the two traditional microphones with a third that sits discreetly inside the ear canal as an integrated part of the receiver module.



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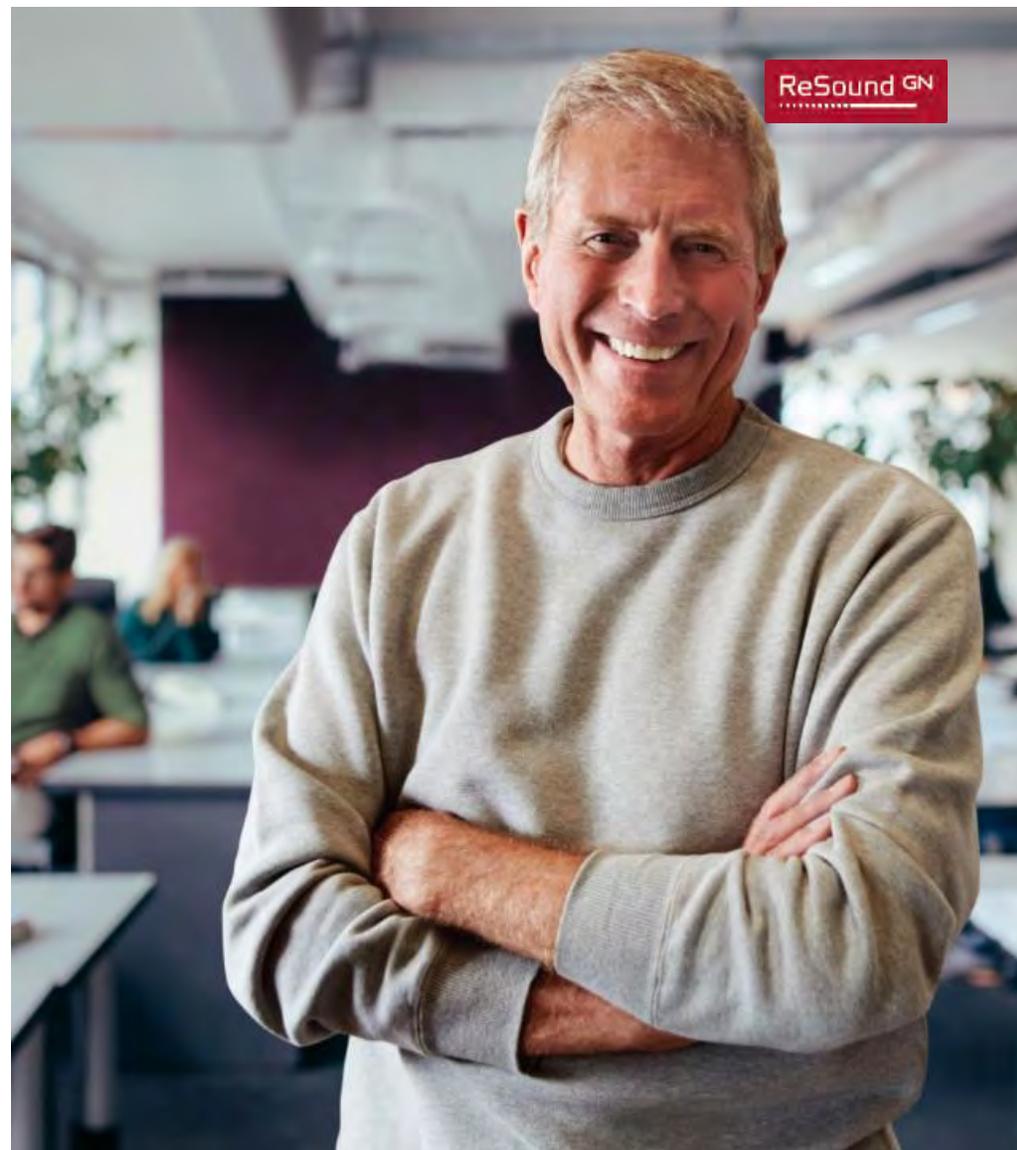


## M&RIE advantages and benefits

Improved localization

Natural sound quality

Comfort in wind



## Our most natural sound quality in an RIE hearing aid

**90%** of listeners prefer\* M&RIE  
for natural sound quality.

**10%** more accurate sound\*\* recognition  
from the front and back.

**15dB** natural wind noise\*\*\* reduction  
without reducing gain.

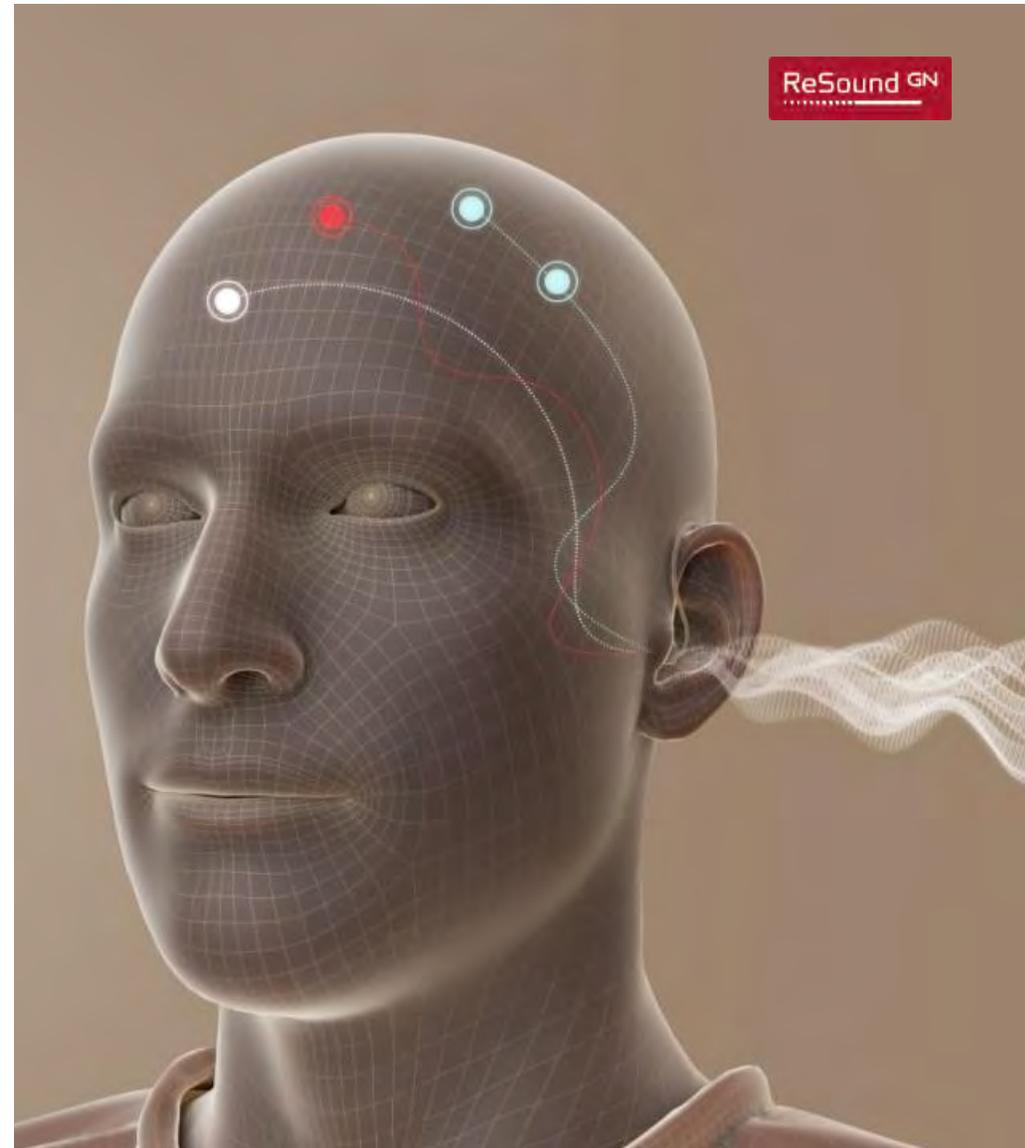
\*With mild hearing loss, compared to pinna compensation and omnidirectionality

\*\*With mild hearing loss, compared to traditional microphone configurations

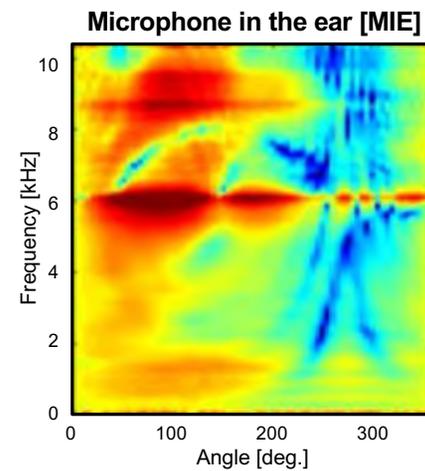
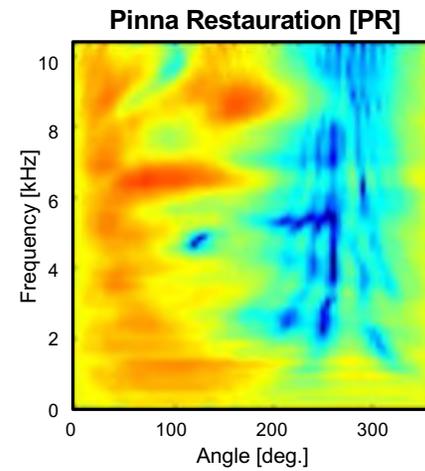
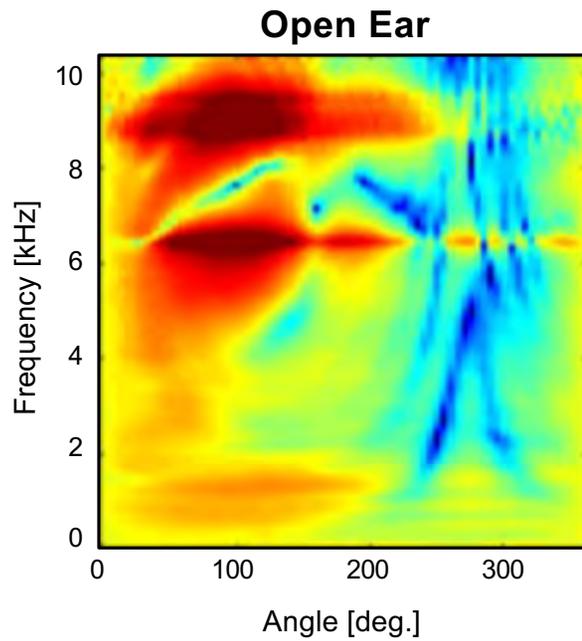
\*\*\*Compared to omnidirectionality

Groth J. (2020). An innovative RIE with microphone in the ear lets users "hear with their own ears." ReSound white paper.

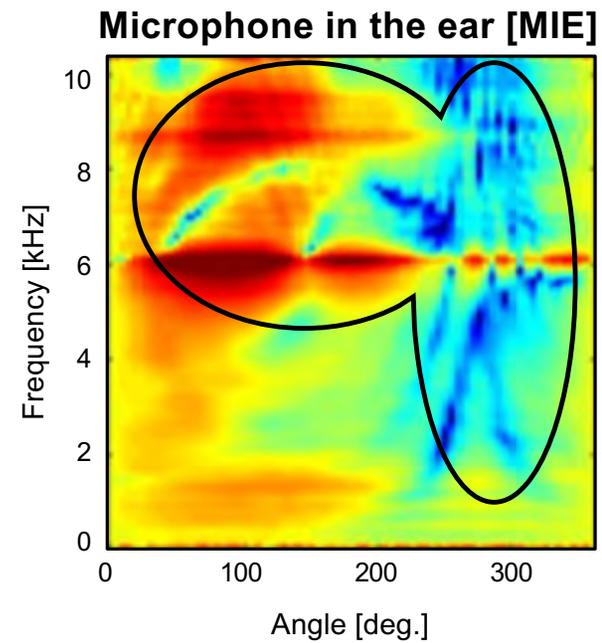
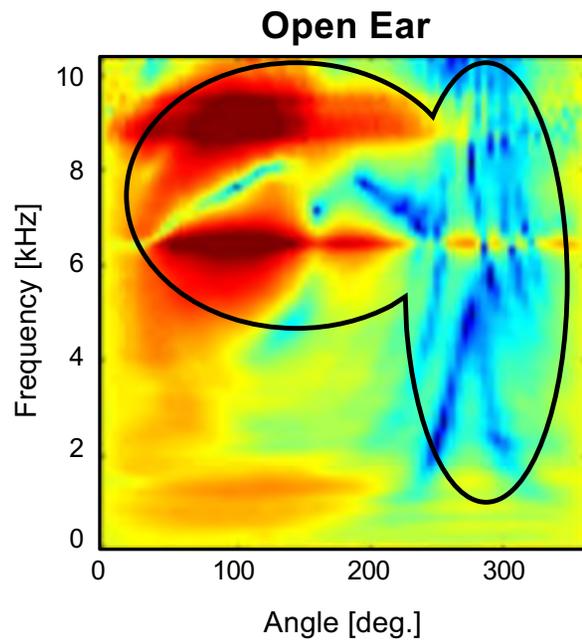
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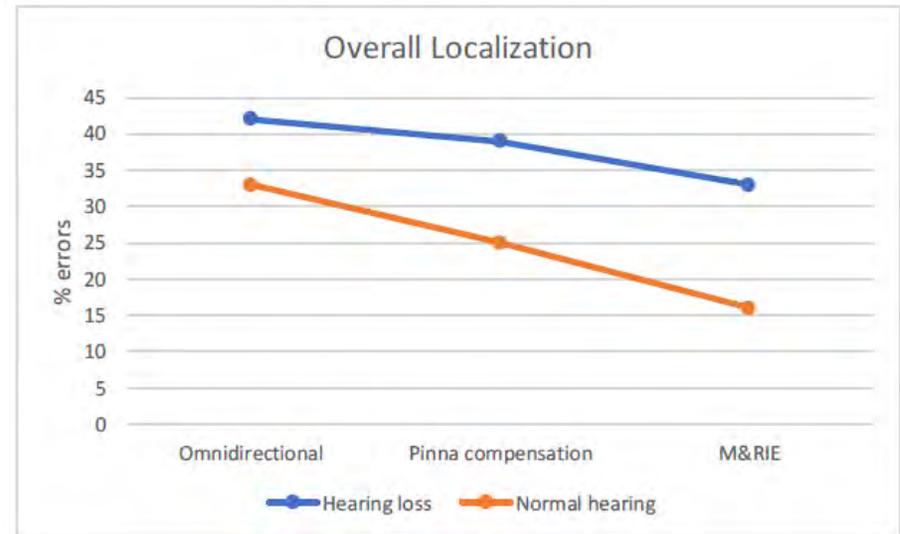
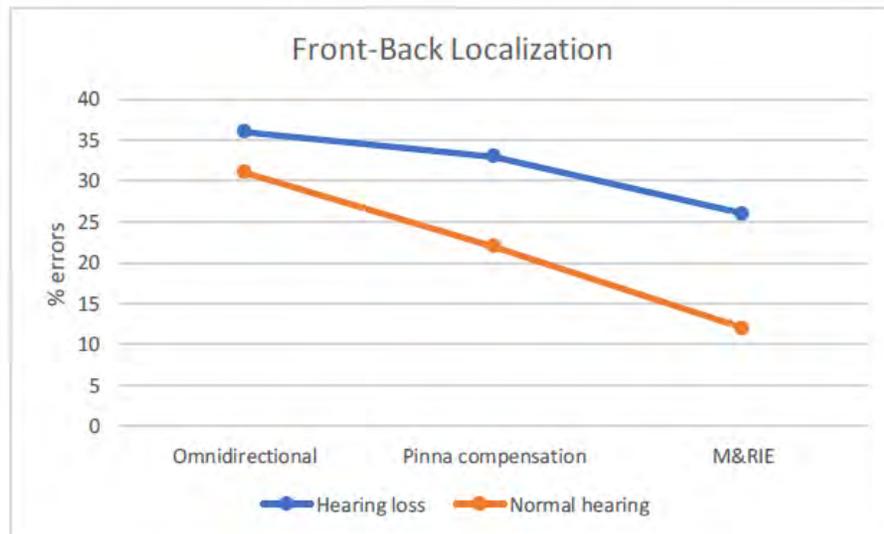


# Improved localization & natural sound quality



# Improved localization & natural sound quality



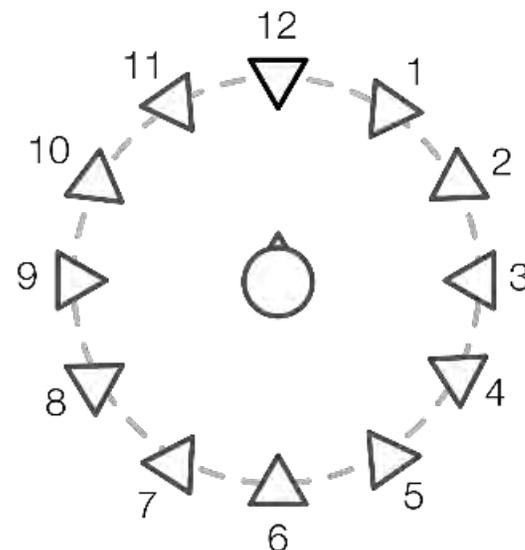


## M&RIE and Localization



Compare M&RIE localization performance to:

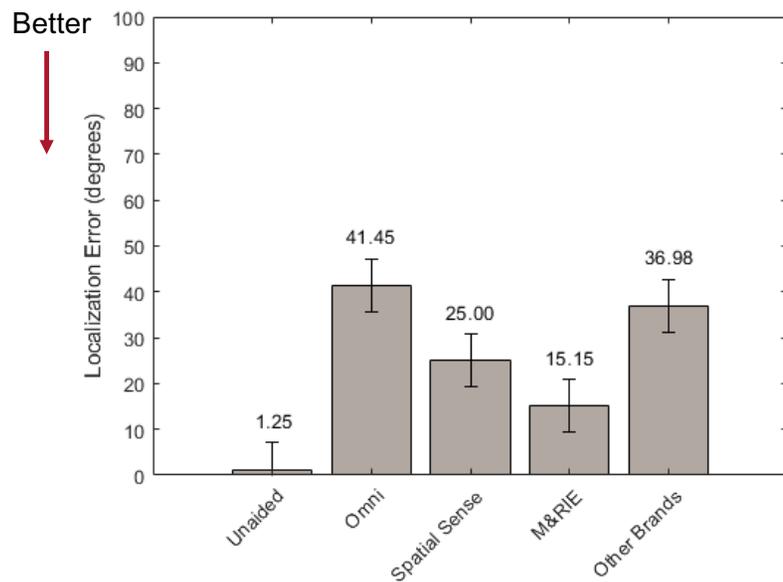
- Unaided
  - Omnidirectional
  - Spatial Sense (average pinna compensation)
  - Competitors' default programs with pinna compensation
- 
- 10 normal-hearing and 10 hearing-impaired participants
  - Test participants sat in the middle of twelve loudspeakers in GN's 3D Audio Lab
  - 250 ms white noise bursts were played randomly from one of the loudspeakers.
  - The test participant responded by stating from which loudspeaker he/she thought the stimulus was played.



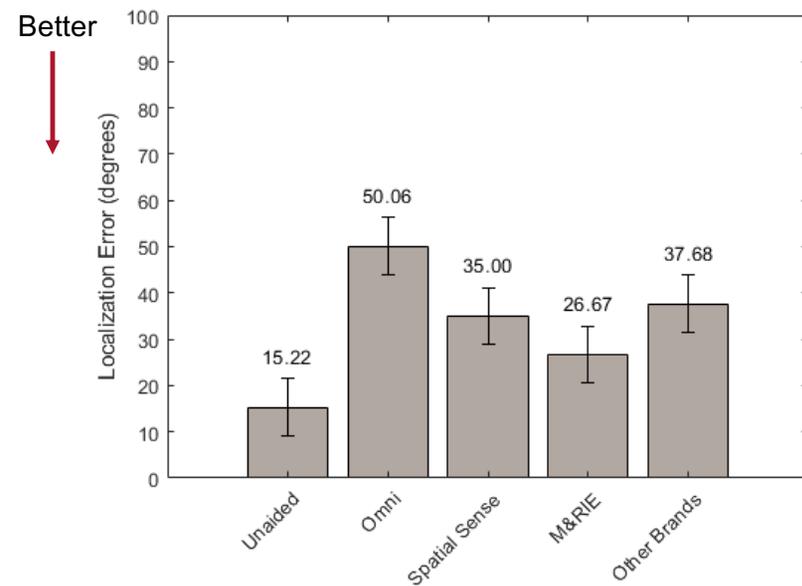
# Results: Average Localization Error



## Normal-Hearing Participants



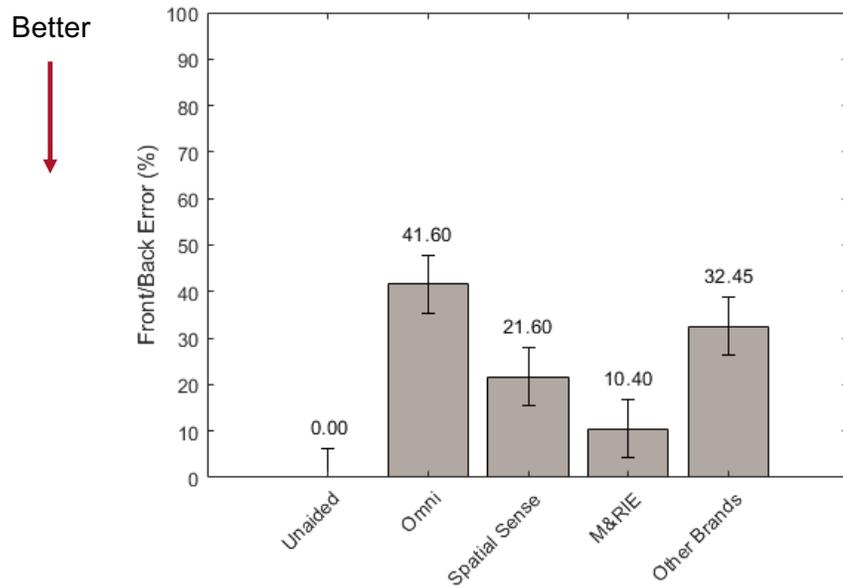
## Hearing-Impaired Participants



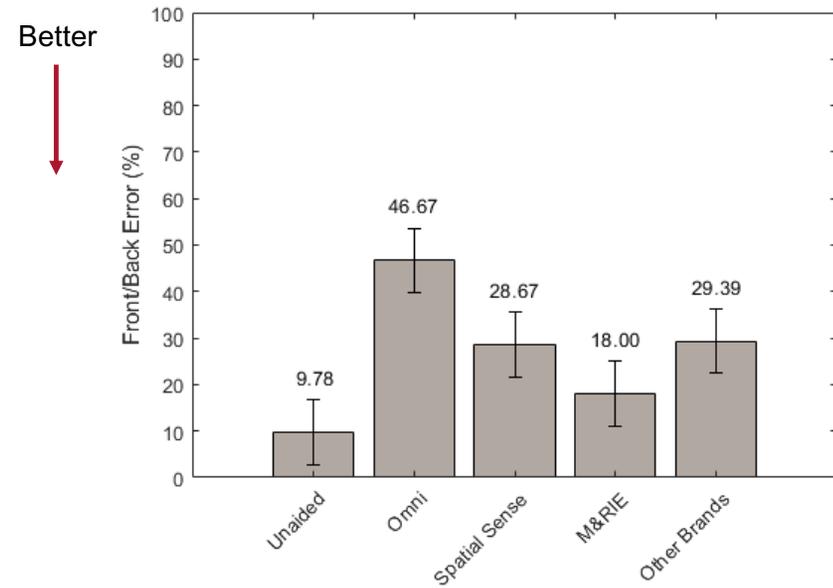
# Results: Average Front-back Error



## Normal-Hearing Participants



## Hearing-Impaired Participants





# Wind noise reduction with M&RIE

Difference in avg wind noise compared to the omnidirectional setting (dB)



Technology that enables ReSound ONE sound quality



## DFS Ultra III

Improved algorithm to incorporate the additional microphone and proximity to the receiver



## New Sound Processing Chipset

**3<sup>rd</sup> microphone input**

**Magnetic induction radio**

**220% increased memory**

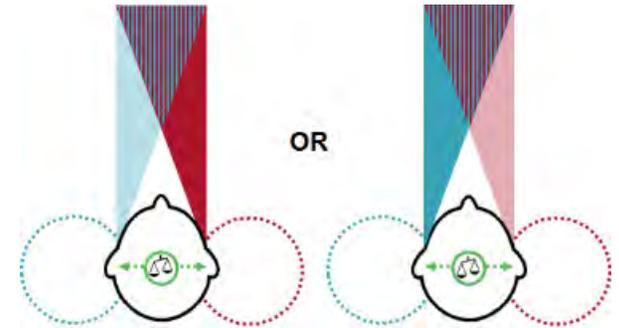
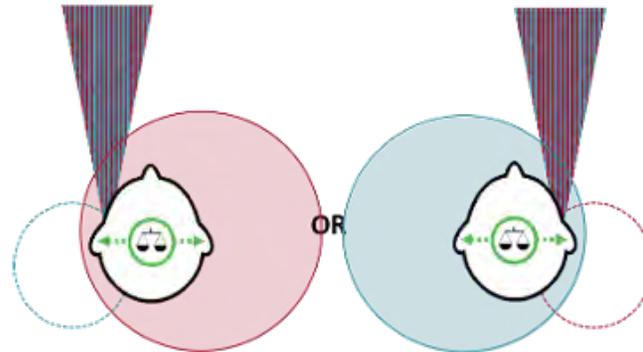
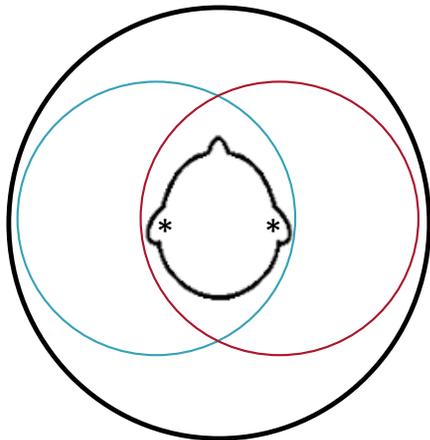
### Spatial Cue Preservation Strategy



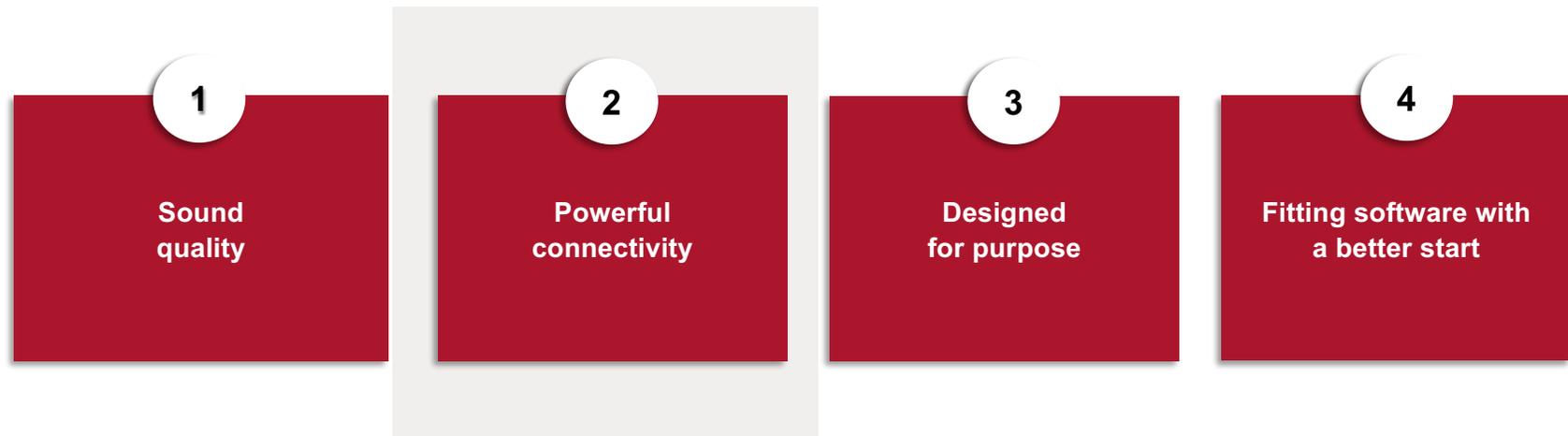
### Binaural Listening Strategy



### Speech Intelligibility Strategy



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## Rechargeability



Premium and standard charger available

CHARGING TIME	HOURS OF BATTERY LIFE
3 hours =	30 hours* or 25 with unlimited streaming
1 hour =	15 hours
10 min =	2.5 hours

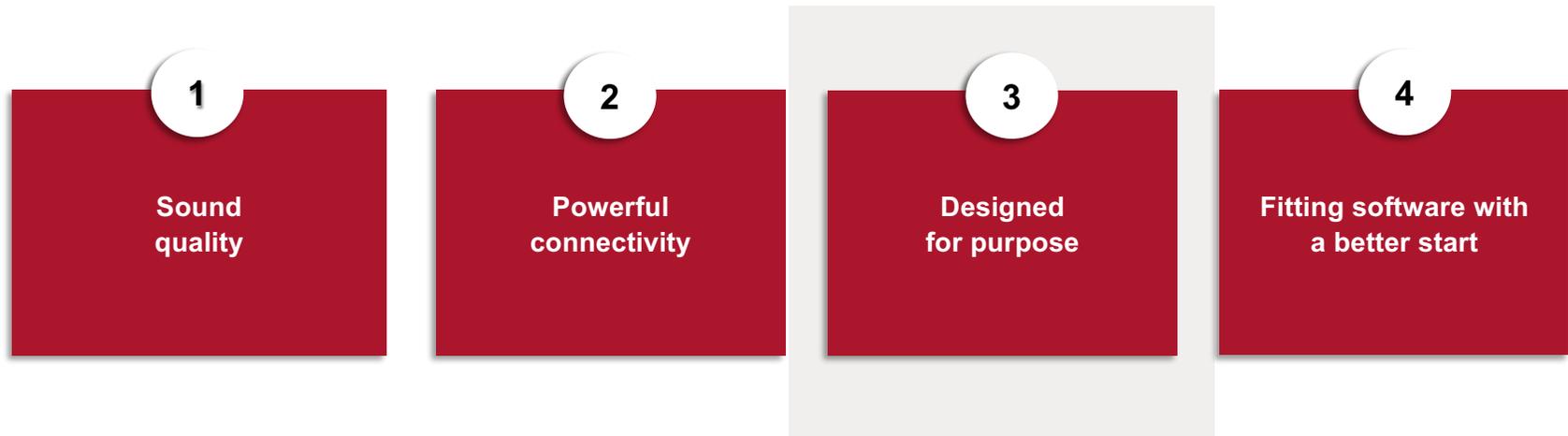
\*The expected battery life is dependent on active features, the use of wireless accessories, hearing loss, hearing instrument age, and the sound environment.

- Battery status indicators (Premium & standard)
- Battery status can be monitored in the ReSound Smart 3D™ app
- Premium charger holds 3 full charges

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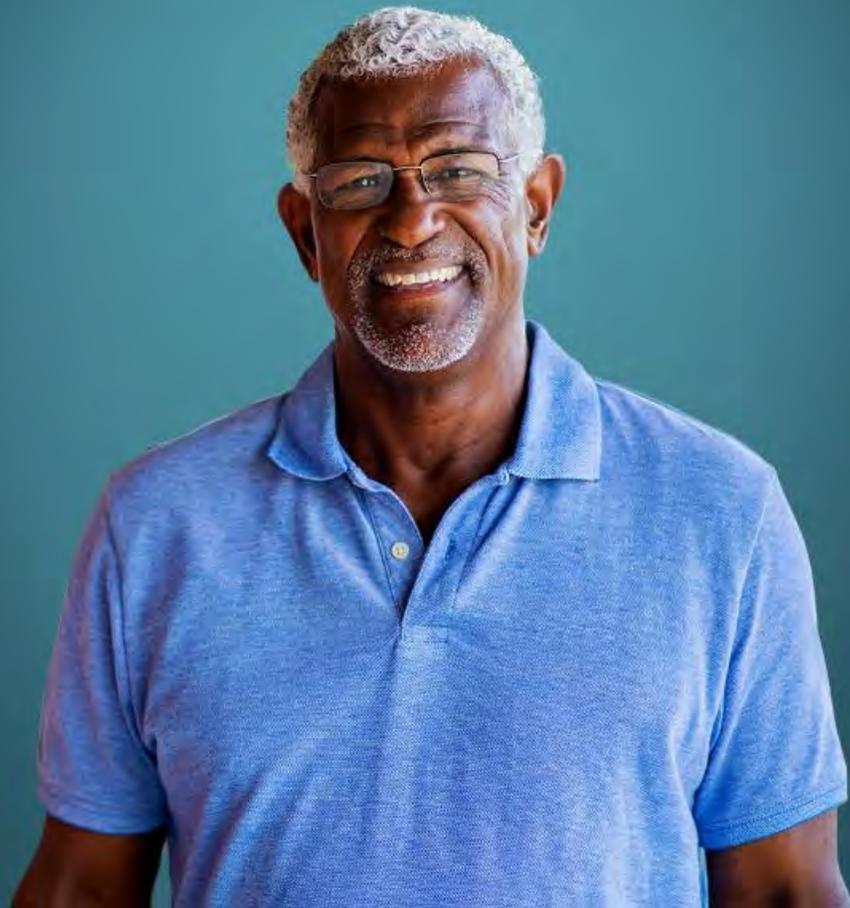


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Design



## Hardware



Designed for comfort, discretion, and performance

- 312 RIE
- 13 RIE
- Rechargeable RIE
- New Colors
- New Domes – Including new Closed Dome
- New Standard Receivers
- M&RIE Receiver

## Styles and colors



**Rechargeable  
RT61-DRWC**



**312 battery  
RT61-DRW**



**13 battery  
RT62-DRW**



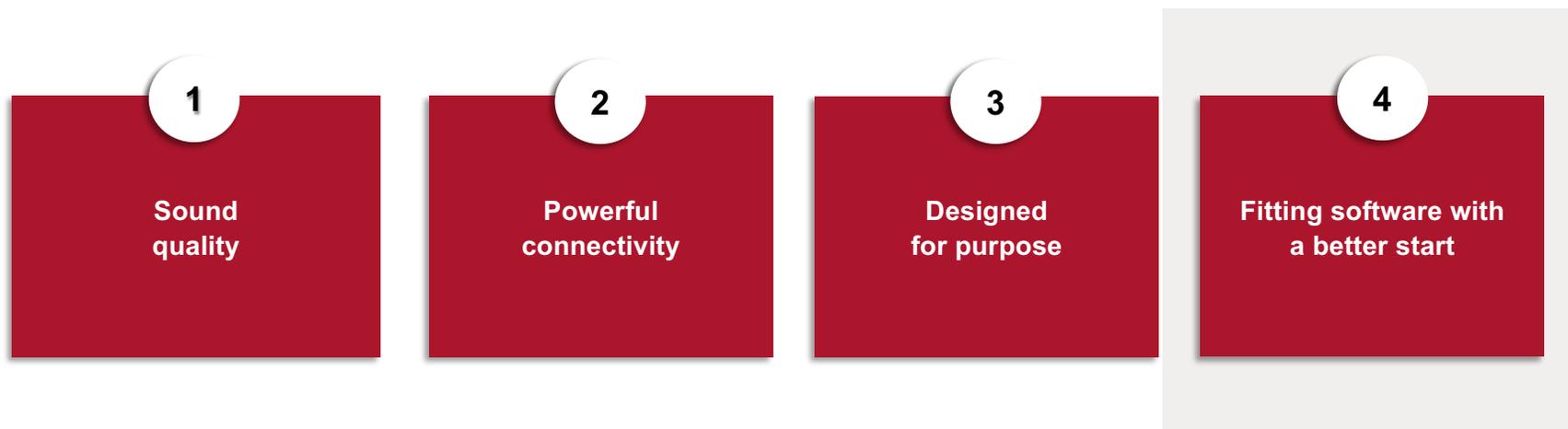
## New domes and receivers



- New design for retention
- New closed dome



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# Fitting software with a better start



## Individualized First Fit

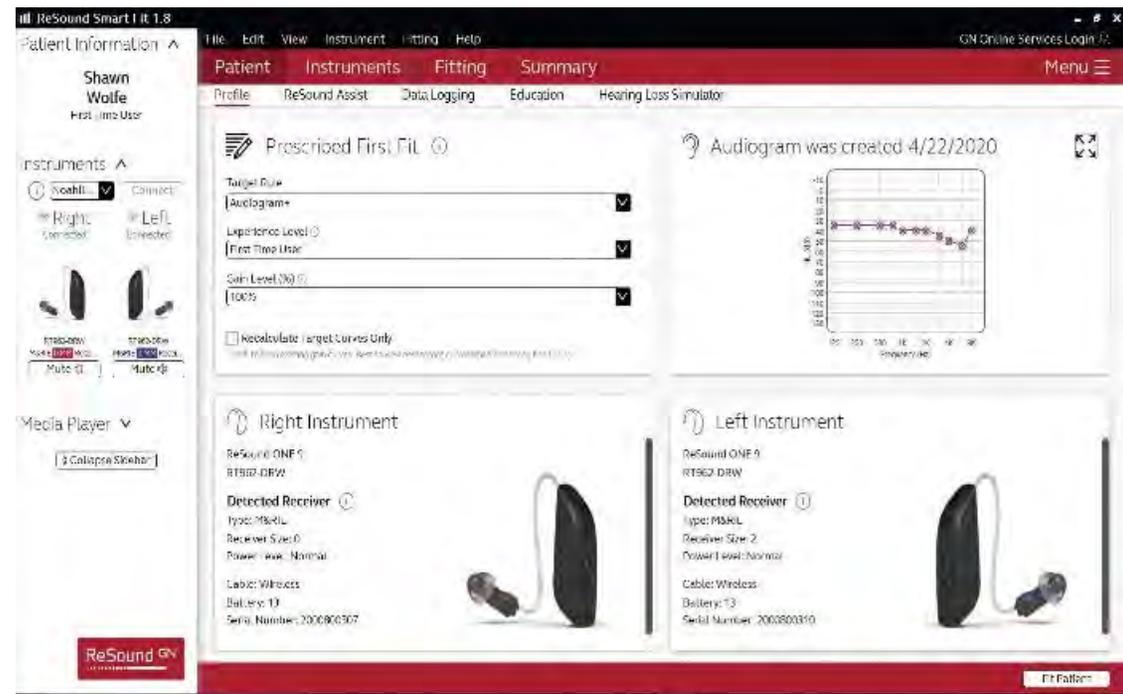
- Based on a patient's audiogram, the selected target rule, gain level (% to target), and experience level, the ReSound Smart Fit™ software will adjust the settings for Noise Tracker, Impulse Noise Reduction, and Expansion to better fit the individual patient.

## Automatic Receiver Detection



**Accurate, comfortable  
and individualized  
from the first fit and beyond**

## ReSound Assist



# Hear like no other





THANK YOU

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