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# RealTime Conversation Enhancement: How Signia's Integrated Xperience is Redefining Hearing Aid Technology

Navid Taghvaei, MA, AuD, ABAC, CCC-A  
Lead Clinical Education Specialist

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- 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.



# RealTime Conversation Enhancement: How Signia's Integrated Xperience is Redefining Hearing Aid Technology

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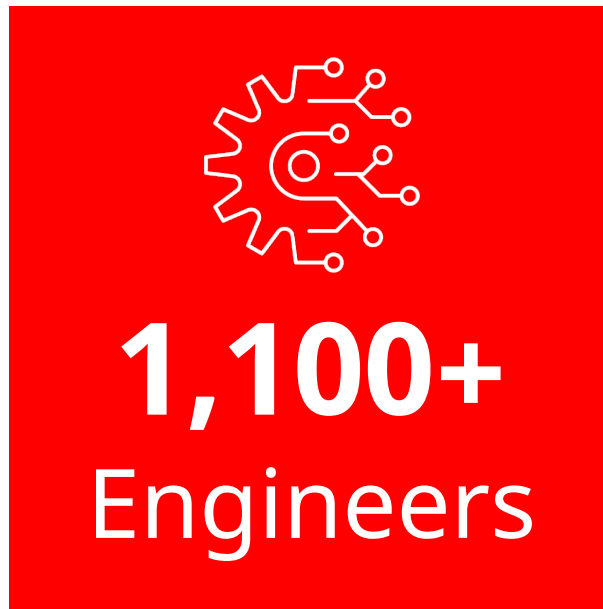
# Learner Outcomes

- 1) After this course, participants will be able to identify the three core components of RealTime Conversation Enhancement (Analyze, Augment, and Adapt) and their role in improving group conversation clarity.
- 2) After this course, participants will be able to compare the performance outcomes of RealTime Conversation Enhancement with traditional directional hearing aid technologies using evidence-based metrics.
- 3) After this course, participants will be able to describe the step-by-step process of RealTime Conversation Enhancement in addressing dynamic conversational challenges in noisy environments.

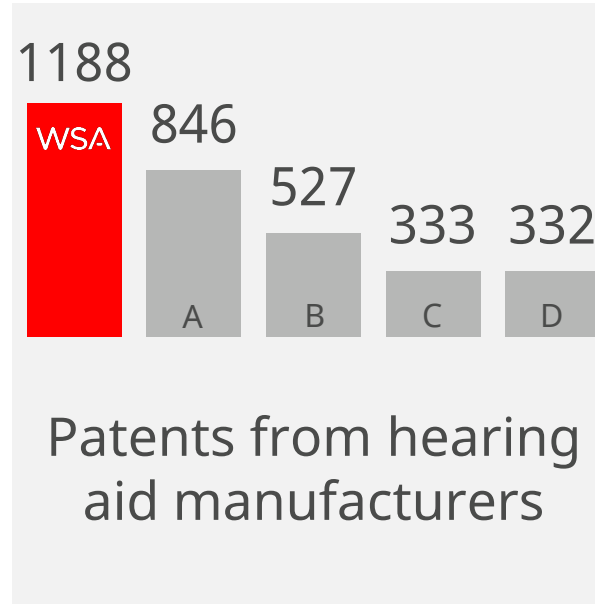


# Research & Design and Innovation Overview

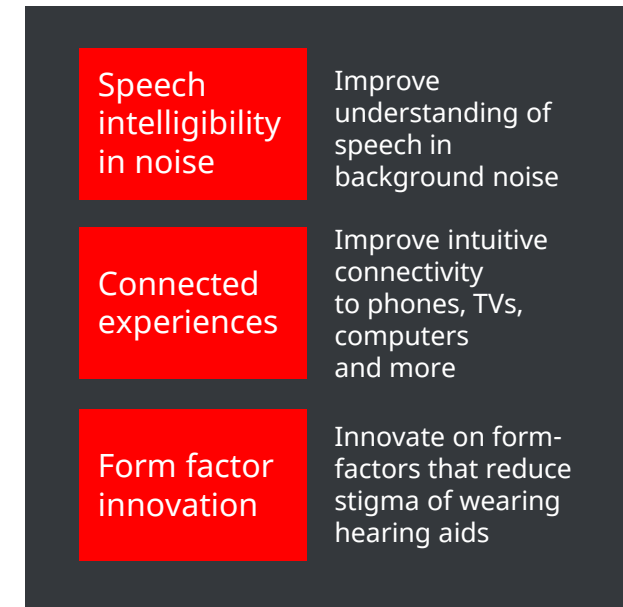
## R&D Facts



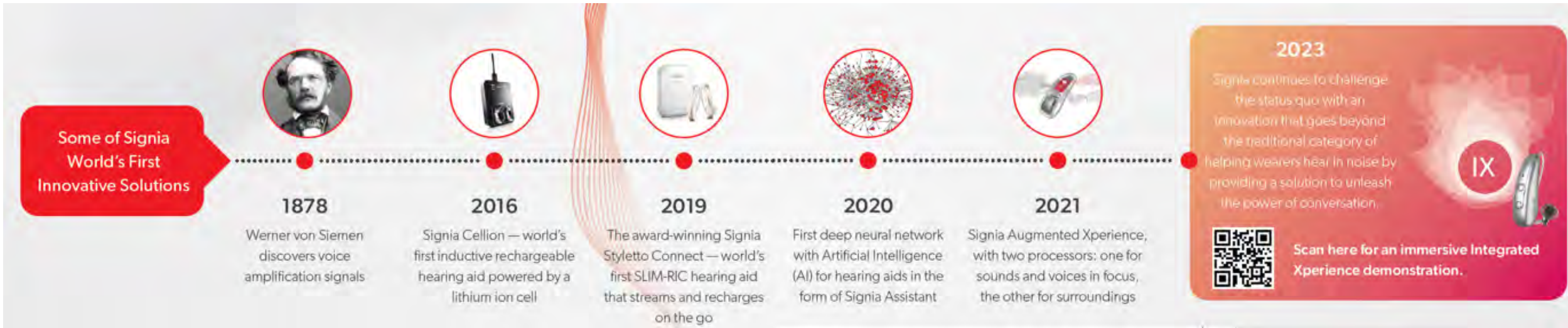
## Innovation in Numbers



## Defined Innovation Fields



# Signia's History of Innovation



140 years in the industry with many world's firsts

7 research hubs with over 1,100 employees

\$160 million annual investment in technology R&D

Pioneer of innovations across design, connectivity, and rechargeability

WS Audiology is the #1 patent applicant for conventional assistive hearing technology

25% of the hearing aids globally are powered by Signia technology



# Signia Award Wins!



Signia Integrated Xperience was a winner of the 2024 BIG Innovation Awards in the Healthcare Platform category. This award win speaks to the genuine innovation behind Signia Integrated Xperience, and its ability to make a significant impact on the quality of life for those in need of hearing health technology and support.



Signia Pure Charge&Go IX won Gold at the 2024 Digital Health Awards® in the Personal Digital Health Devices/ Wearables category because of its ability to help wearers listen and contribute effortlessly to the conversations around them.



Signia was named a Best of Innovation honoree in the 2024 CES Innovation Awards for the Signia Silk Charge&Go IX hearing aid, which provides unprecedented sound clarity and definition for wearers in noisy group conversations — even when the wearer or speakers are in motion.



Signia was a Globee® Awards winner in the Achievement in Customer Service Excellence category. The prestigious win reflects our team's ability to elevate the customer experience and drive success.



Signia won the BIG Excellence in Customer Service 2024 Award in the Transformation of the Year category. This award win is a testament to our amazing staff's commitment to service excellence!



Signia Styletto IX has been named a winner of the Future Innovation Awards in the Active Lifestyle category. This prestigious award win illustrates Signia's excellence and innovation in designing hearing aid form factors that empower users to lead vibrant, dynamic lives.



# Group Conversation in Noise is Difficult...

Group conversations in noise are the biggest unmet need for people with hearing loss

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Can lead to frustration, isolation and ultimately withdrawal

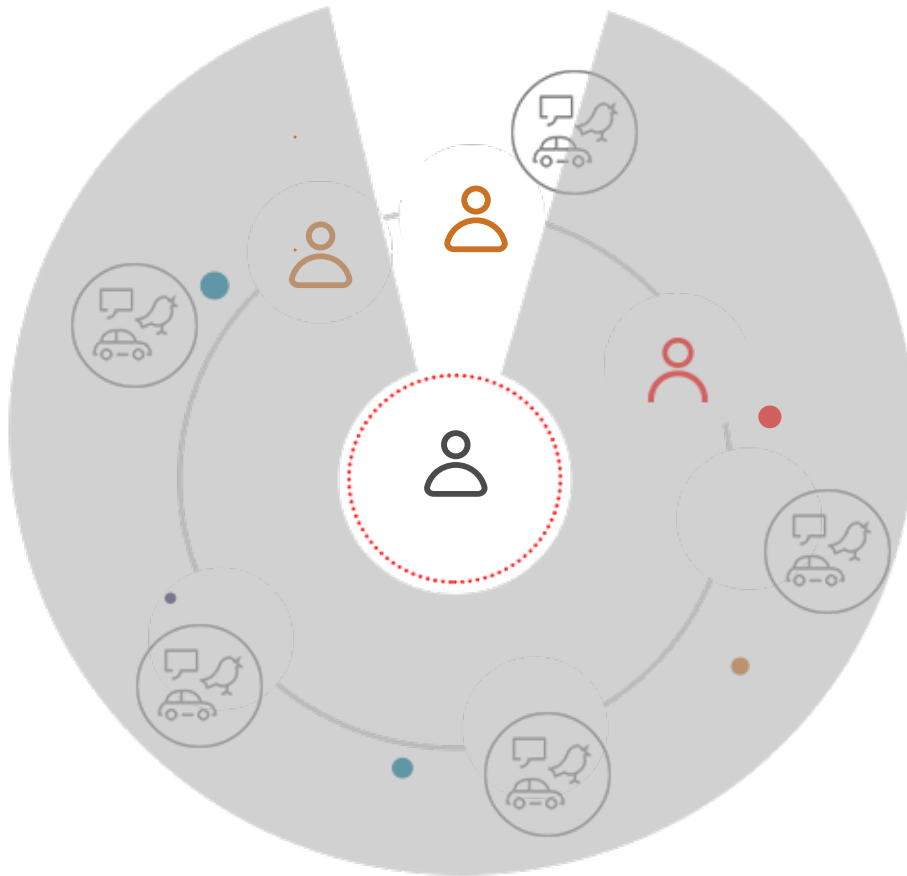
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They miss out on the moment, we miss out on their contribution to the conversation

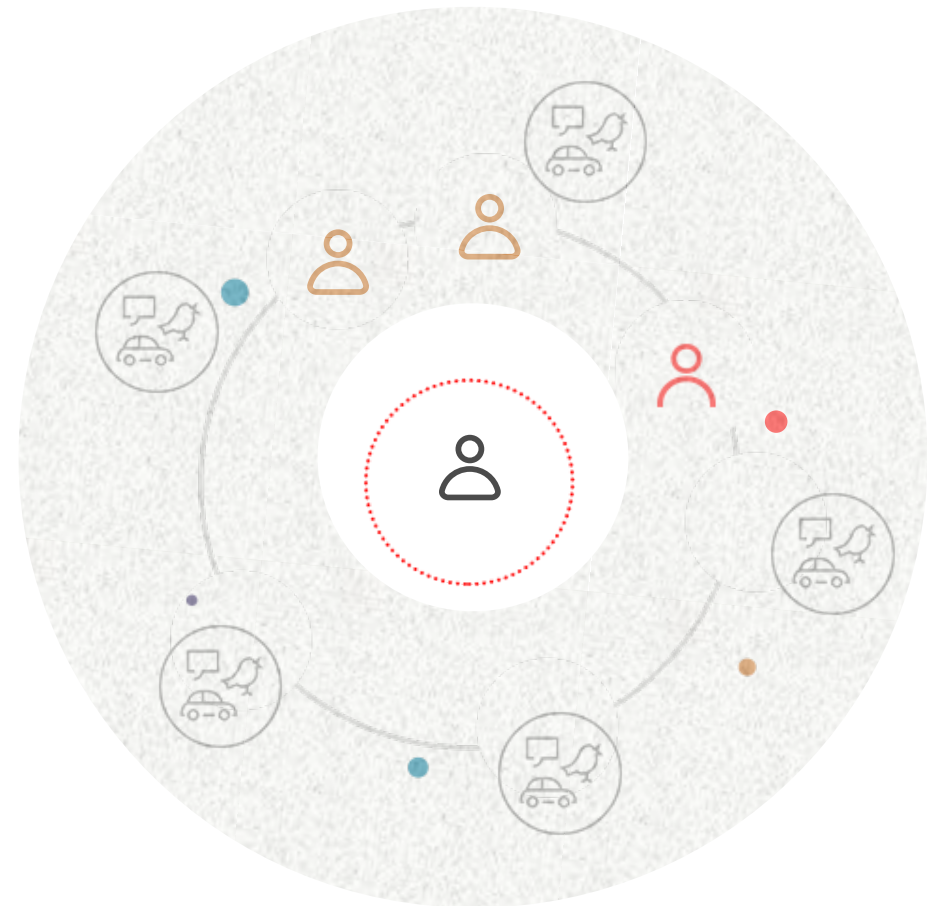


# Traditional Approaches Fall Short

Narrow Focus



Broad Focus



# Augmented Xperience Changed the Game



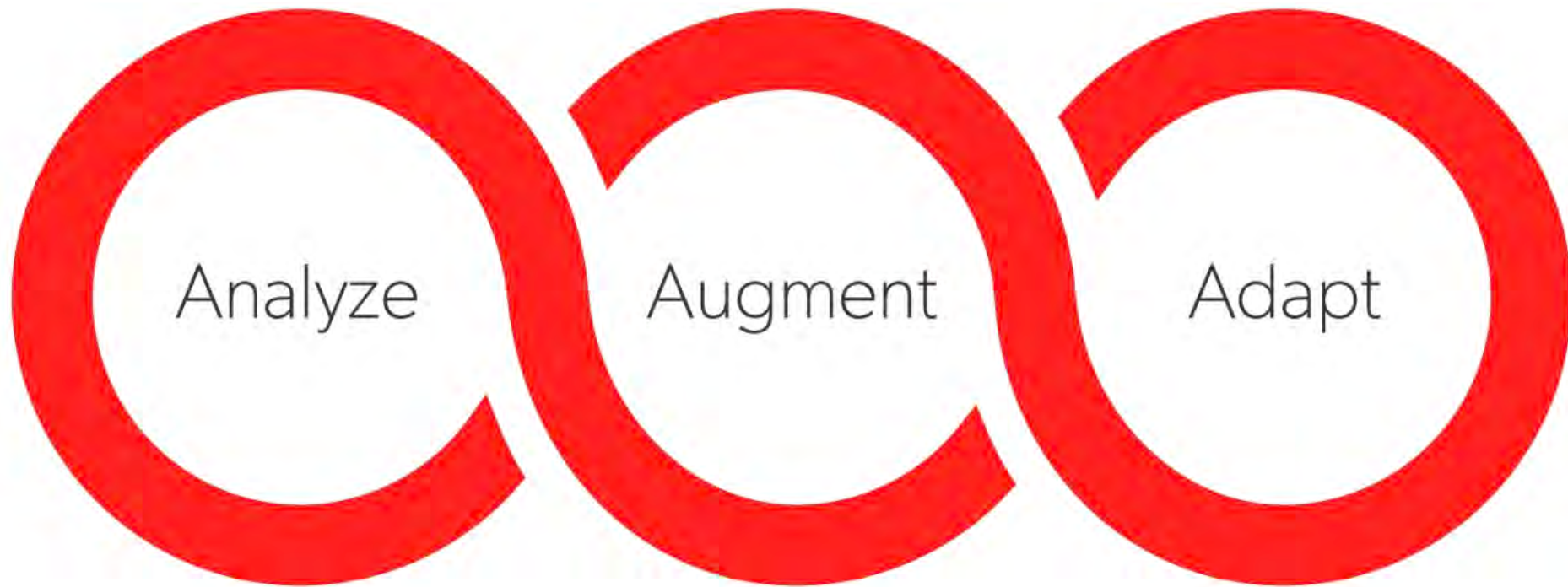
# No Compromise in How Speech and Ambient Sound are Processed



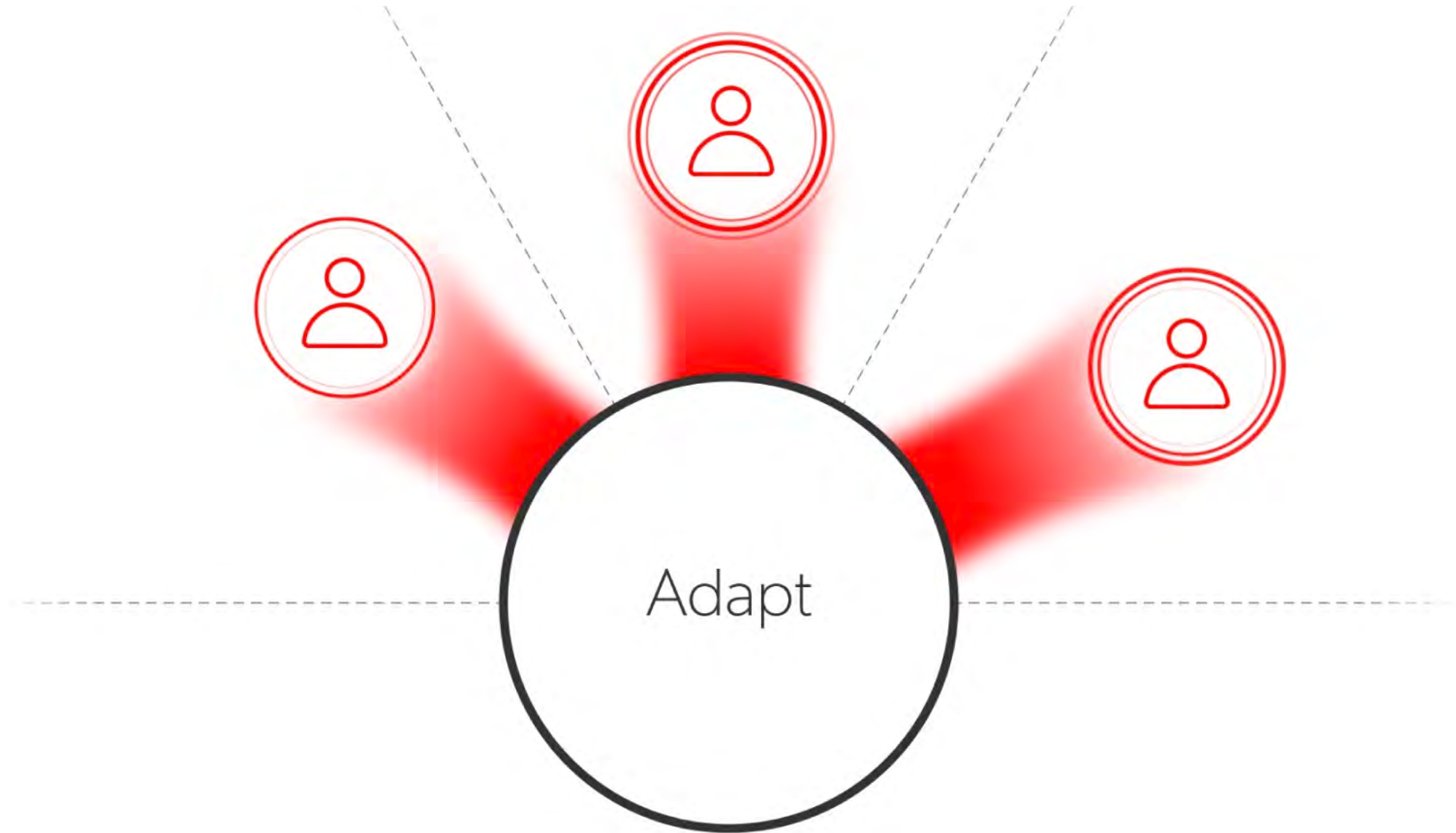
Powered by  
the full Signia Integrated  
Xperience platform with RealTime  
Conversation Enhancement



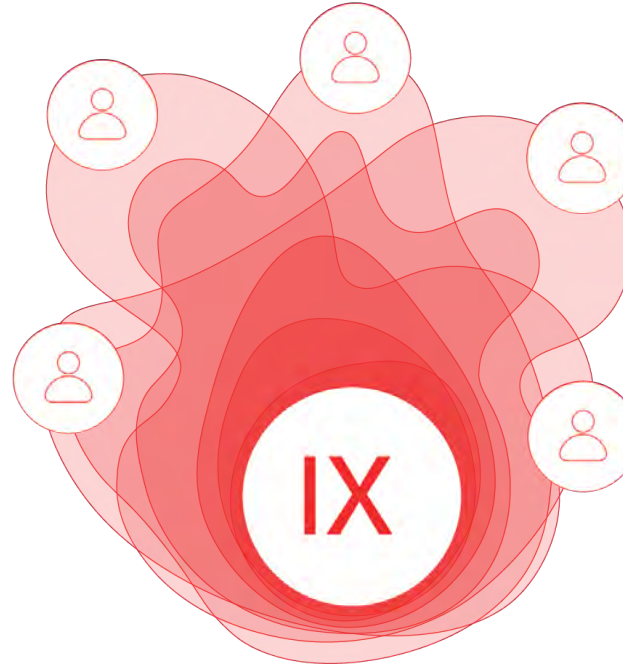
# RealTime Conversation Enhancement







# Signia IX Benefits



- Patients can experience seamless, communication in noisy environments with multiple people speaking, sometimes at once, without having to look at the speaker or missing a beat
- Patients can stay fully present in noisy real-world conversations, giving them the confidence to join in and contribute with ease – unleashing the power of conversation

# A Foundation of Multi-Modal Research



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# The Signia Research Network

- Hundreds of publications across multiple centers involving 1000s of participants
- Multi-modal objective and subjective data with a holistic focus:
  - Physiological
  - Neural
  - Behavioral
- Working to improve conversation is at the core of what we do



## NEW STUDY

### Signia IX with pioneering multi-stream technology delivers 22% better speech understanding in noisy group conversation than a competitor with an AI co-processor-driven platform

A new study shows that Signia Integrated Xperience (IX) improves speech understanding by 22% in a noisy group conversation, compared to a competitor with an AI co-processor-driven platform.

In this human performance study<sup>1</sup>, 27 participants with hearing loss were fitted bilaterally with both Signia IX and the best performing competitor hearing aids (Brand A1) from a previous technical signal-to-noise ratio (SNR) performance study where Signia IX was shown to provide a higher output SNR in a noisy group conversation than four main competitors<sup>2</sup>.

In this study, the speech reception threshold (SRT50) was measured with each of the two test hearing aids in a modified version of the standardized OLSA speech-in-noise test, which simulated a group conversation in a noisy canteen with alternating talkers from multiple directions.



1. Jensen NS, Mohnlein-Gilbert K, Wilson C, Berwick N, Kamkar Parsi H, Best S, Samra B & Taylor B. 2024. Signia IX with pioneering multi-stream technology delivers 22% better speech understanding in noisy group conversation than a competitor with an AI co-processor-driven platform. Signia White Paper.
2. Jensen NS, Wilson C, Kamkar Parsi H, Samra B, Han J, Best S & Taylor B. 2024. Signia IX delivers more than twice the speech enhancement benefit in noisy group conversation than the co-processor competitors. Signia White Paper.

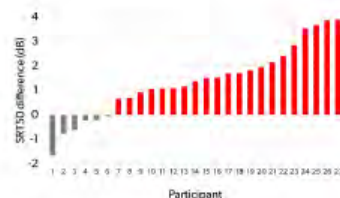
#### Unleash the Power of Conversation

This study showed that with Signia IX and RealTime Conversation Enhancement, your clients can experience significantly improved access to multiple conversation partners in noise, even if they aren't directly facing them, when compared to premium competitor hearing aids with an AI co-processor-driven platform.

The results showed a significant 1.4 dB improvement (reduction) of SRT50 with Signia IX. This corresponds to an outstanding 22% improvement in speech understanding.



77% of the participants performed better with Signia IX – conclusively proving the benefit of the IX platform over an AI co-processor driven platform for a wide range of participants.



# NEW



signia

## — WHITE PAPER

### Signia IX with pioneering multi-stream technology delivers 22% better speech understanding in noisy group conversation than a competitor with an AI co-processor-driven platform

Signia Integrated Xperience (IX) with RealTime Conversation Enhancement was developed to address one of the most important needs of hearing aid wearers: the ability to follow and ultimately contribute to dynamic group conversations in background noise. In this paper, we report on a study where the speech understanding performance obtained with Signia IX in a noisy group conversation was compared to the performance provided by a newly launched competitor hearing aid with an AI co-processor-driven platform. The results demonstrated that Signia IX achieved a statistically significant improvement in speech reception threshold, outperforming the competitor by 1.4 dB in a modified OLSA test. This difference translates to a remarkable 22% enhancement in speech understanding. Notably, 77% of the 27 participants performed better with Signia IX compared to the competitor.

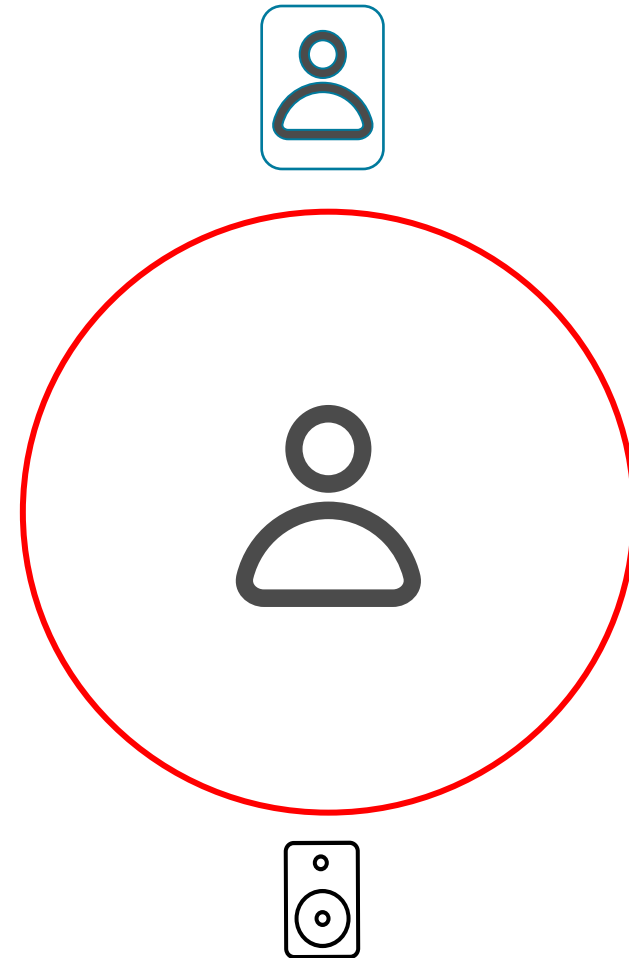
Niels Segard Jensen, Katharina Mohnlein-Gilbert, Cedi Wilson, Nathan Berwick, Homayoun Kamkar Parsi, Sebastian Best, Barinder Samra, Brian Taylor,  
NOVEMBER 2024

#### Take-away messages

- This human performance study confirms the hearing performance effects suggested by previous results from a technical study comparing Signia IX to leading competitors.
- This study involved simulating a group conversation in noise using alternating speakers from multiple angles.
- Signia IX provided a mean speech reception threshold (SRT50) that was 1.4 dB better (lower) than the mean SRT50 provided by a competitor with an AI co-processor. This difference is statistically significant and corresponds to 22% better speech understanding for the average wearer.
- The result was highly replicable, with 77% of participants performing better with Signia IX than with the competitor.
- This result shows the strong benefit of RealTime Conversation Enhancement's ability to track and enhance multiple talkers in real-time, delivering better outcomes in a noisy group conversation than a leading competitor powered by an AI co-processor.

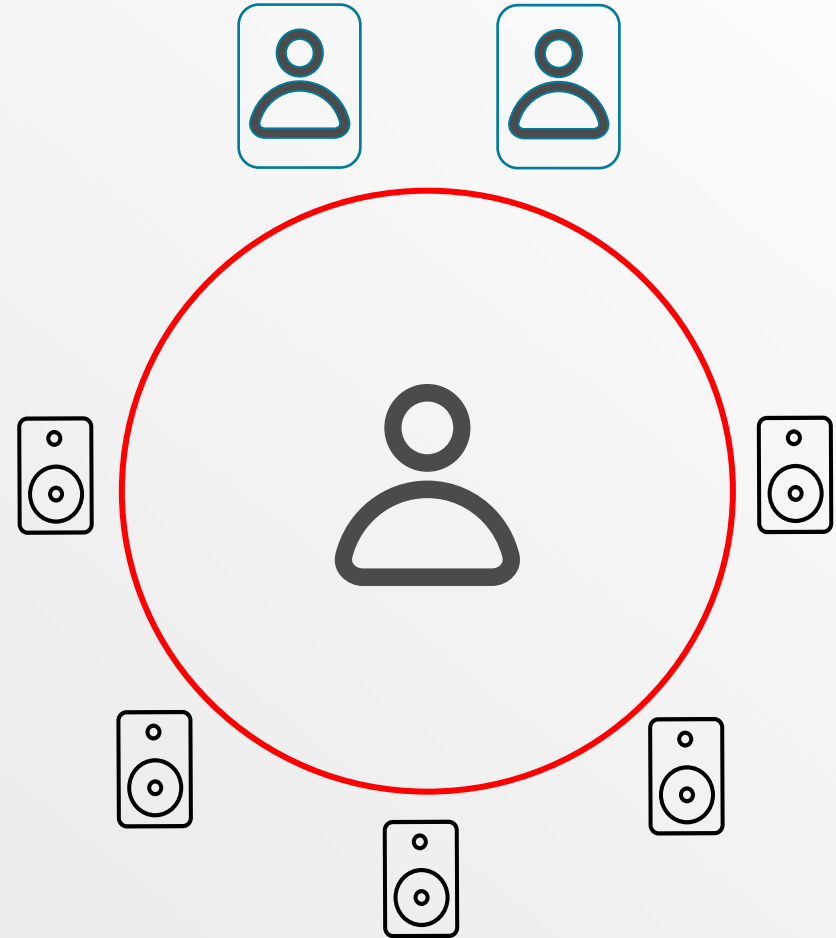
# Typical testing scenario for Speech in Noise

Group conversation  
scenario..not your typical  
lab setup



# 95% of Wearers Had Improved Performance in a Group Conversation Scenario\*

Group conversation scenario..not your typical lab setup

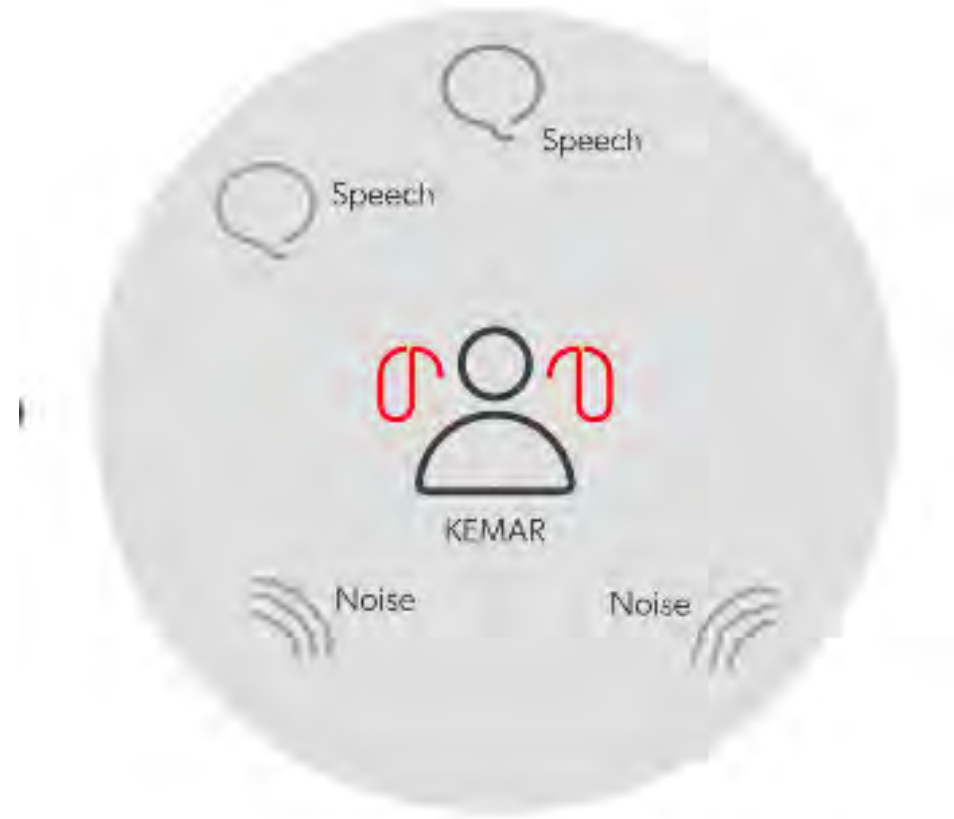


\*Compared to RealTime Conversation Enhancement off  
Visit for more details: <https://www.signia-pro.com/en-us/local/en-us/claims-data/>



# Signia Integrated Xperience is an industry breakthrough<sup>1</sup>

- Test conditions applicable to the real world
- Objective technical measurement recording the output of the hearing aids in a KEMAR manikin

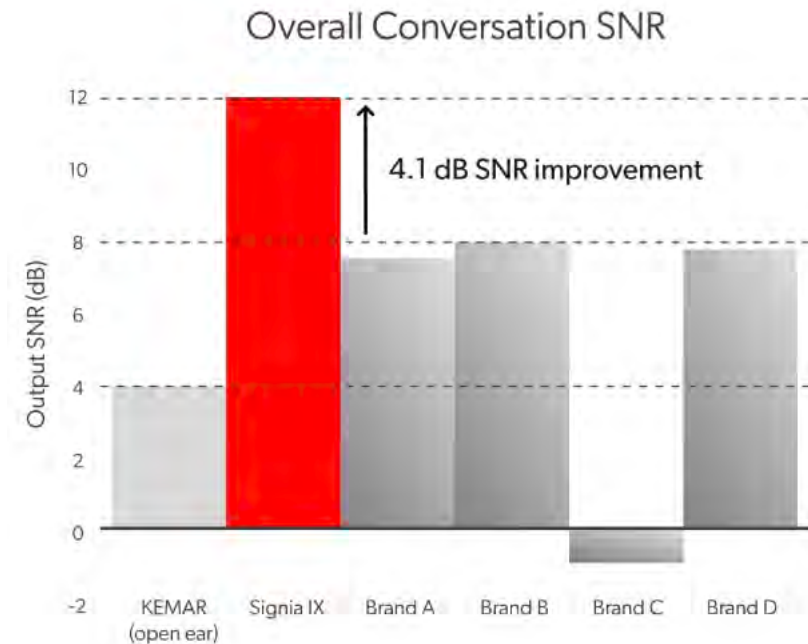


<sup>1</sup> Jensen et al. (2023). Power the conversation with Signia Integrated Xperience and RealTime Conversation Enhancement. Visit for more details: <https://www.signia-pro.com/en-us/local/en-us/claims-data/>



# Integrated Xperience is an industry breakthrough<sup>1</sup>

- Test conditions applicable to the real world
- Objective technical measurement recording the output of the hearing aids in a Kemar manikin
- Shows a remarkable **4.1 dB SNR** improvement compared to the absolute best the competition had to offer

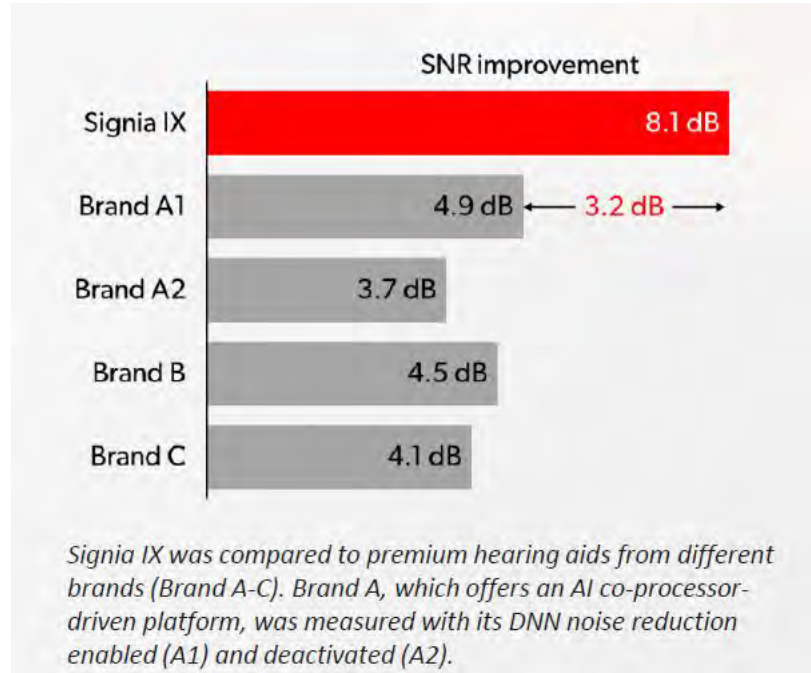


<sup>1</sup> Jensen et al. (2023). Power the conversation with Signia Integrated Xperience and RealTime Conversation Enhancement. Visit for more details: <https://www.signia-pro.com/en-us/local/en-us/claims-data/>



# 2024 Update! Twice the speech enhancement benefit than the closest competitor

**Signia Integrated Xperience (IX) delivers more than twice the speech enhancement benefit in a noisy group conversation than the closest competitors, including AI co-processor-driven platforms, with a remarkable 3.2 dB SNR improvement over the closest competitor\***



- Replicates objective KEMAR study recording the output of the hearing aids using newest hearing technology available, simulating a dynamic group conversation, relevant to real-world conversations
- AI co-processor driven platform on vs. off only provides a 1.2 dB SNR improvement
- **Signia IX with RTCE remains unmatched in real-world, noisy group conversation** – doubling the ratio between the intensity of the speech and the intensity of the noise.

\* Jensen NS, Wilson C, Kamkar Parsi H, Samra B, Hain J, Best S & Taylor B. 2024. Signia IX delivers more than twice the speech enhancement benefit in a noisy group conversation than the closest competitors. Signia White Paper.



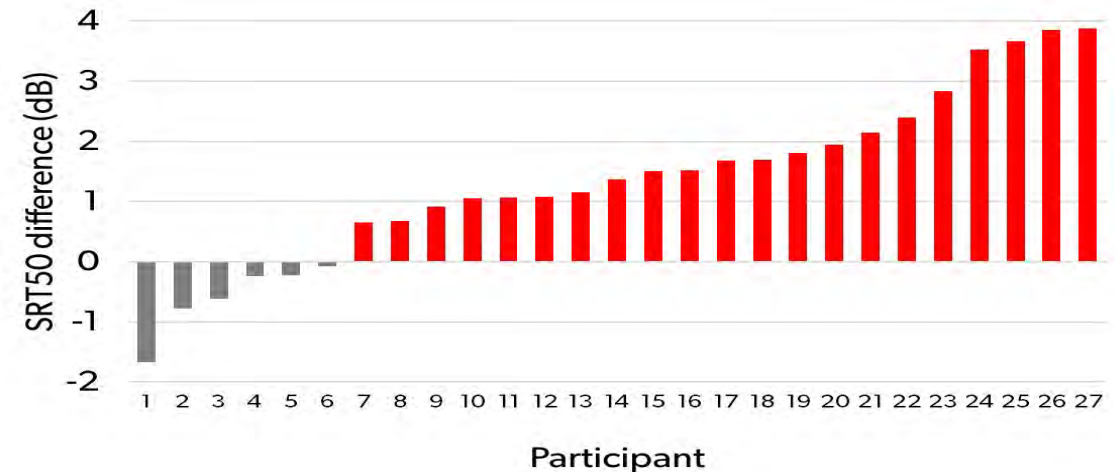
# 22% better Speech Understanding in Noisy Group Conversation than a competitor with an AI-co-processor-driven platform!

Again, Signia IX with RTCE remains unmatched in real-world, noisy group conversation

- The results showed a **significant 1.4 dB improvement** (reduction) of SRT50 with Signia IX. This corresponds to an outstanding **22% improvement in speech understanding**.



- 77% of the participants performed better with Signia IX** – conclusively proving the benefit of the IX platform over an AI-co-processor driven platform for a wide range of participants.



# Assessing Signia IX in the Real-World\*



- University of Western Ontario, Canada
- Principal investigator: Dr. Susan Scollie



- N = 20 experienced hearing aid wearers
- Bilateral symmetrical sensorineural hearing loss
- 11 female, 9 male
- Mean age 73.6 years (range: 61-84 years)



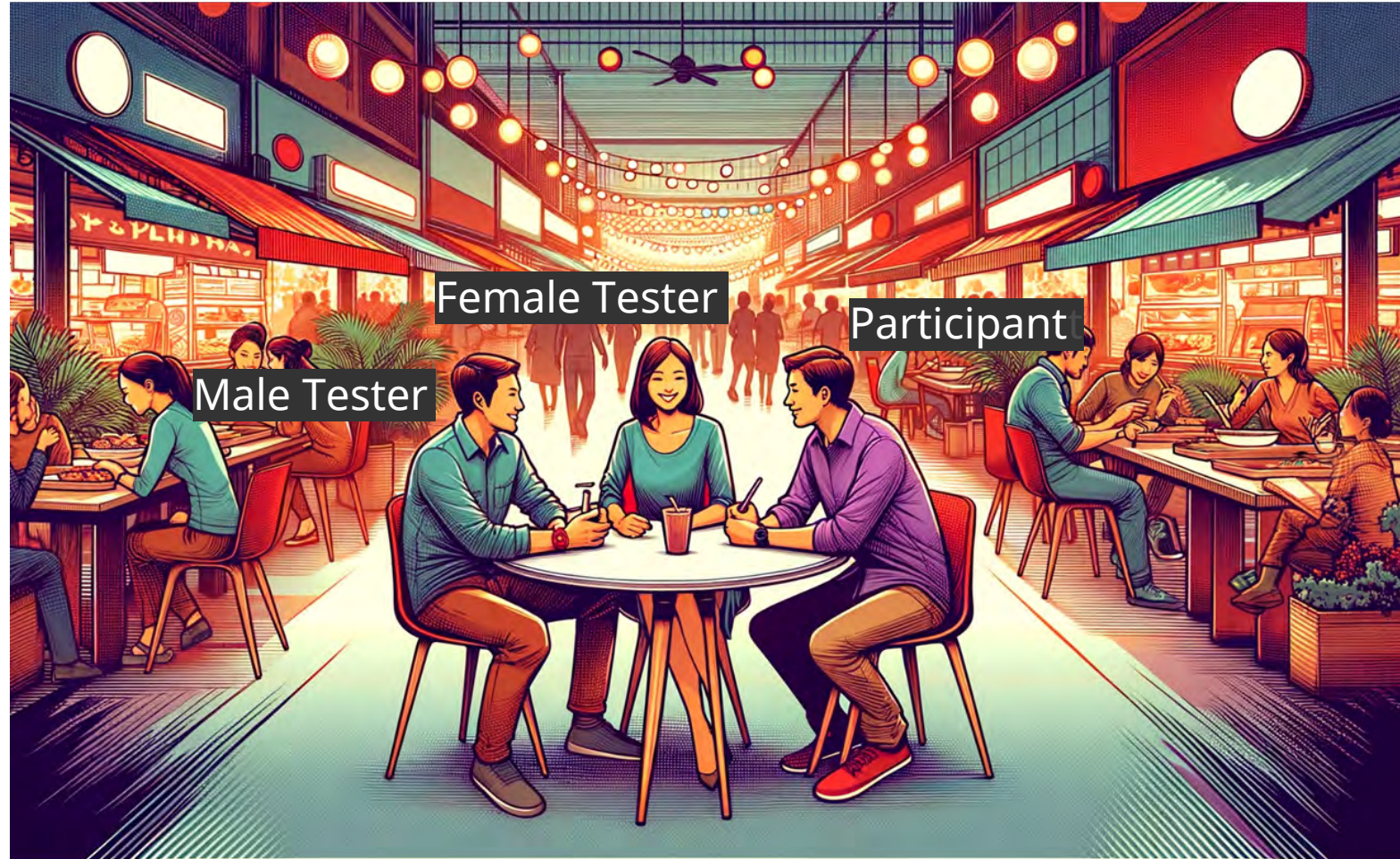
- Signia Pure C&G 7IX, M-receiver and power domes
- IX First Fit, REM verification vs. NAL-NL2
- One program with RTCE activated (RTCE ON)
- One program with RTCE deactivated (RTCE OFF)
- All other features activated, incl. Augmented Focus



- Paper submitted to the American Journal of Audiology for peer review

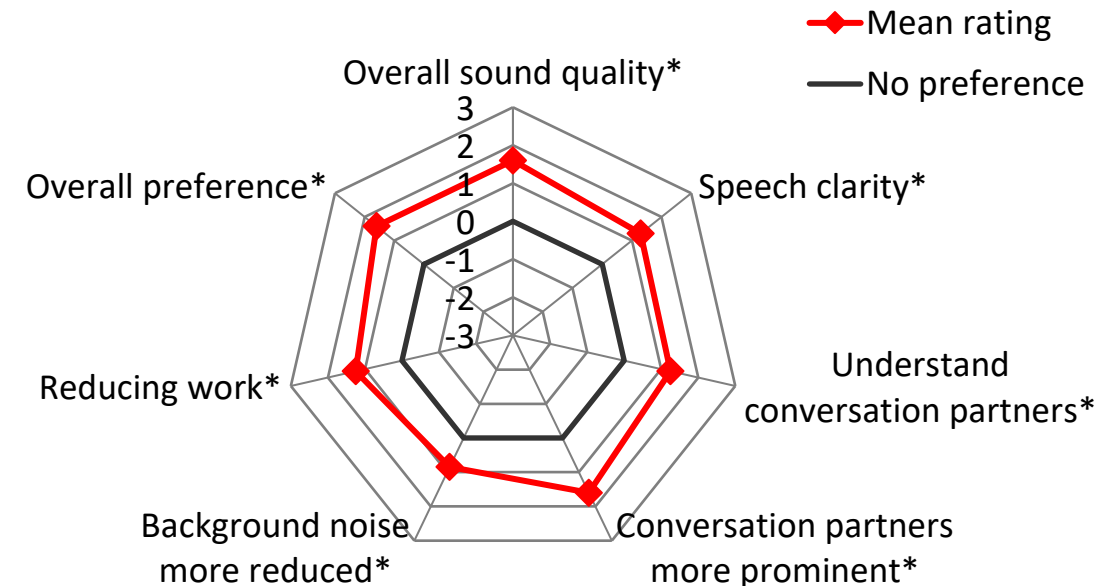


# Test Environment



# Results – Average preference ratings of all participants

- RealTime Conversation Enhancement was preferred on all investigated aspects of the group conversation experience
- 80% of participants had an overall preference for RealTime Conversation Enhancement
- Results strongly indicate speech is prominent and the sound quality is high and immersive



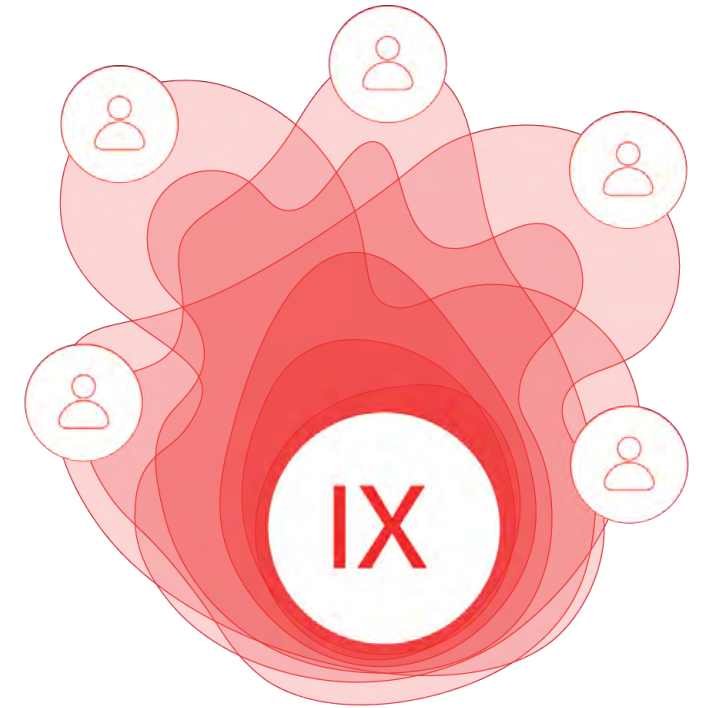
|                          |                 |                          |               |                         |                |                         |
|--------------------------|-----------------|--------------------------|---------------|-------------------------|----------------|-------------------------|
| Strongly prefer RTCE OFF | Prefer RTCE OFF | Slightly prefer RTCE OFF | No preference | Slightly prefer RTCE ON | Prefer RTCE ON | Strongly prefer RTCE ON |
| (-3)                     | (-2)            | (-1)                     | (0)           | (1)                     | (2)            | (3)                     |

\*Statistically significant effect



# Study conclusions

- RealTime Conversation Enhancement was preferred on all investigated aspects of the group conversation experience
- 80% of participants had an overall preference for RealTime Conversation Enhancement
- The results are in line with the results from previous lab evaluations of Signia IX with RealTime Conversation Enhancement



\*Folkeard, Scollie, et al. (submitted to American Journal of Audiology, 2024).

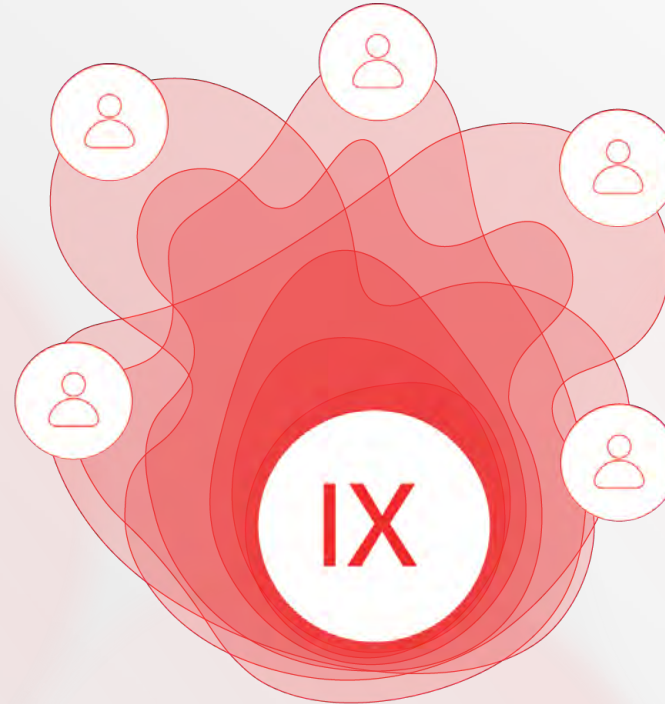


# Signia IX Research summary

## Objective Human Performance Data

95% of participants had improved SNR in a noisy group conversation scenario

**2024 - 22% better speech understanding in noise compared to AI driven noise reduction competitor with 77% performing better with Signia IX**



## Objective Technical Data using KEMAR

4.1 dB SNR improvement over the nearest competitor in a noisy group conversation scenario

## Subjective Human Preference Data

80% of participants preferred Signia IX in noisy real-world group conversation

**Study replicated in 2024 - Signia IX delivers an additional 3.2dB SNR, which is more than twice the speech enhancement benefit in a noisy group conversation than the competition's newest platform**

# CROS IX

Traditional CROS transmitter in noise



Signia CROS transmitter in noise



Unique Signia **skewed directionality** improves speech understanding in noise by skewing directional pattern toward unaided ear



# Signia Product Portfolio

## Something for Everyone



# The Signia Portfolio



Pure  
Charge&Go IX



Pure  
Charge&Go T IX



CROS Pure  
Charge&Go IX



Styletto  
IX



CROS Styletto  
IX



Intuis 4  
M/P/SP



Pure  
312 AX



CROS Pure  
312 AX



Active Pro  
IX



CROS Active  
IX



Silk Charge&Go  
IX



CROS Silk  
Charge&Go IX



Insio IIC/CIC  
IX



Insio  
Charge&Go  
AX



Motion  
Charge&Go  
SP X



Motion  
Charge&Go  
P X



Motion  
Charge&Go  
X

# Signia: Unleashing the Power of Conversation for ALL



# Thank You!

[Navid.Taghvaei@signiausa.com](mailto:Navid.Taghvaei@signiausa.com)



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