2025 Industry Roundtable

Presenters: Susan Scollie, PhD, Brian Taylor, AuD, Dave Fabry, PhD, Jessica Dancis, MA, Jessica Lovell, BA, John Pumford, AuD, Steve DeMari, MS, Tammara Stender, AuD

It's my pleasure to introduce our guest moderator for this year's industry roundtable, Dr. Susan Scollie. I'll go ahead and hand the mic over to you, Dr. Scollie, to introduce everyone today. Okay, thanks very much, Christy.

And welcome, everyone, to the 2025 industry roundtable. Today we're welcoming a panel of experts from across a wide range of companies within the hearing industry. And I'll just go around on the order of the slide clockwise, if that's okay. So I'll introduce John Pumford, who's with us from Audioscan. Hi, John and Jessica Lovell from CareCredit and Brian Taylor from Signia.

Jessica Dancis from Sennheiser and Steve DeMari from Caption Call, Dave Fabry from Starkey, and last but not least, Tammy Stender from Resound. So thanks everyone for, for taking your time to share with us some information about your products that are of use to everybody with the theme that we're going to be talking about today. So we'll move to the next slide, if you would, Melissa, please.

Thank you. Before we get started, we do have a couple of mandatory pieces of information to share with you so you can look to the slides to see disclosures that are required for this type of a course and next slide and also risks and limitations that just advise all of us to take any information that is relevant and adapt it as needed for our own particular context and such. Next slide, please. And the learning outcomes today is going to focus on product innovations and available products that you can make use of potentially, potentially in your practice. So we'll move to the first question and get started today.

So overall, what you'll see for today's session is we're going to be looking at unusual, rare and unique needs and how we can meet those. So the first question is asking each of our panelists to give us an example of an innovation in their company's product line that has been designed to meet those unusual, rare or unique needs. So special cases and the hard, hard to find that type of thing. So we're going to open up the first session with Jessica who's going to come to us with her products innovations. Thanks.

Go ahead, please, Jessica. Thank you, Susan. Today I'm going to talk about CareCredit's custom link and if you would please advance the slide. Thank you. CareCredit's custom link is an all digital financing experience that allows patients to learn about financing, then see if they pre qualify and apply for the CareCredit Health and Wellness credit card.

They can also calculate their estimated monthly Payment and then pay online, all from their own device. Next slide, please. So how does this work, this simple online solution? It allows patients to simply using their phone, scan a QR code and see if they pre qualify, again with no impact to their credit score. They can then apply for the care credit card from their own device and get a decision within seconds.

And then if approved, they can use their CareCredit card the exact same day. Now, the great thing about this is they can calculate monthly payments and they can also pay for the services at your location the same day. Next slide. So I just want to talk about some of the benefits of this technology. You know, really, you can access this from anywhere, it's contactless, and patients can easily estimate their monthly payments.

And then if approved, like I said earlier, they can use this card immediately. And ultimately, this technology saves time for you and your practice, which is invaluable. I'm also including a one sheeter with detailed instructions for how to create this and how to set this up at your practice. This will be included in the AO notes after this roundtable. So I encourage you to look at that one sheeter and look at the detailed instructions.

But again, this is just a great way to save time for your practice and it's a great way for your patients to apply and to get the health to get the care that they need.

Thank you, Susan. Okay, thanks very much. So we're going to be keeping today's panel on time. And so we're going to, we'll have lots of time at the end to chat further with you as well. We're going to move on then to welcoming Jessica Dancis to the, to the panel.

And please, Jessica, if you could give us an example of an innovation in your company's product line that has been designed to meet unusual, rare, unique needs for patients. Yeah, absolutely. Thank you for having me. So the standard. See, sorry, having a little trouble moving this forward.

There we go. All right.

There we go. Okay. Gotta love the first time challenges. So the standard patient profile that most providers think about and focus on are the people who are ready for prescription hearing aids. And yet we know patients are leaving our clinics as tested, not sold.

And those with mild and hidden hearing loss are often told to come back next year or when it gets worse. These patients come back because they were struggling and fell through the cracks because they didn't need or weren't ready for a prescription hearing aid yet. Then I asked a group of almost 90 students if their internship clinic carried OTC hearing aids or ALDS and only 8% said they had off the shelf solutions to help these patients. So how do you identify an off the shelf patient profile so they don't end up without the help they need? You look for patients who don't want or aren't ready for a prescription hearing aid are more of a do it yourself type of patient.

Maybe they purchased through other channels and now they're coming to you and that those that are looking for situational support.

So we have our All Day Clear OTC hearing aids. These are self fitting hearing aids designed for individuals with a perceived mild to moderate hearing loss. And our Sennheiser set 880 TV listener for

crystal clear TV sound. We designed these products specifically for the patients to help fill those gaps.

All Day Clear are powered by the Synova technology you trust. We didn't want to replace you. The HCP and the audiogram. We're focusing on the new user and we've got two automatic environments made for all connectivity. These are sold as a pair with a sleek and contemporary designs and they are one size fits most.

The TV connector is compatible and not included. This is the same TV connector that you have probably already in your office that works with Phonak and Unitron hearing aids. These are these hearing aids can be self set up by the patient. It's super quick and easy and we do offer comprehensive online and phone support and they come with a one year manufacturer's service warranty. There is the option for professional support so we know how important you are and so unlike most OTCs we have included the ability for you to add value to be able to program the devices.

So our fitting method when it is self fitting is based on the it's a preference base so they're listening to the sounds as speech sound and then decide when it is comfortable and when it is clear. And because we know most first time users aren't ready for 100% to target, our approach is to fit them at 80% gain so that we know that they're getting sufficient amplification to be successful and have the sound quality that will be comfortable to them to start wearing all day. Preference based is more intuitive and it leaves the Pure tone Audiogram fitting and NAL NL2 fitting formula for you to program as part of the in clinic care package. With stellar feedback from consumers and return rates that are drastically lower than the average OTC and similar to rates for prescription hearing aids all day Clear is an easy fit for your patients and clinic and the in clinic care package helps you take their experience to the Next level, by being able to add your professional services. It only includes one appointment, a consultation programming in the Unitron TrueFit software.

And we throw in an extra year of manufacturer service warranty. These Sennheiser products process all transactions through Unitron and the TrueFit software because the technology that powers the software unlocking feature and billing solution are exclusive to Unitron. And you can adapt NALNL2, you can adjust the gain and, and you can control the feedback manager. We are advertising your services. Sennheiser is.

And, and we're putting a value on it. We're saying that you are valuable and they should be paying you for your services. We're advertising them at 250. But all of the services are bought directly from you. They have to come in to you.

Buy them from you. You can charge them whatever you want. But if you do charge them the 250, the minimum advertised price, you only pay $50 to unlock the devices. So just for one appointment, your margin is $200. Think about that's one appointment.

Then of course you can charge them for additional services. Hey, Real Ear is extra. Come in, buy a service plan. All those other things are ways for you to add that extra value and provide additional care.

And by selling all day Clear with its option for easy programming and built in counseling support, you can lower the number of tested not treated patients. Help more people earlier in their hearing journey, get them hearing better and enjoying your services and support and then lead to future prescription hearing aid sales.

So contact us. You can contact your Phonak or your Unitron rep if you'd like to learn more. Okay, thanks very much, Jessica. So I think we'll again leave a Q and A to a nice Q and A session towards the end. I don't have any questions for you right now.

And so we'll move that on then to Dave. Dave Fabry from Starkey. Give us an example of an innovation in your company's product line that has been designed to meet unusual, rare or unique needs of patients. Thanks. Thank you very much, Susan, and it's a pleasure to be here with you today.

The topic that I want to discuss shouldn't be unusual, rare or unique to the audiologists on the call if you go ahead and advance my slide. Because while our attention has been focused on the comorbidities between hearing loss and cardiovascular disease and cognition in the recent years, the reality of the situation is hearing loss does not occur in a vacuum and hearing and balance are inextricably intertwined. Given they're part of the same end organ. And we know that even a mild degree of hearing loss from a study done over a decade ago at Johns Hopkins showed that people with mild degrees of hearing loss elevate their fall risk by three times and that risk increases with each decade of increasing hearing loss on average. Go ahead and advance to the next slide.

We know, and this has certainly been something that at Starkey, we've been focused on since 2019, when we were the first in our industry to introduce inertial measurement units in products beginning in 2018. But then in 2019 we introduced a fall detection and alerting system similar to what the traditional around the neck kind of alerting systems have been used, but with the requirement that only the hearing aid user wear their devices and be connected to their smartphone. I can speak from personal experience. My mother fell about a decade ago and broke her hip and while the fall did not kill her, the consequences of the fall led to a downward spiral in her health and three years later she unfortunately passed away. We know that falls are the leading cause of injury related deaths in older adults, and while a fall detection feature is great and provided peace of mind to patients, providers and caregivers and family members alike, we thought really that if they suffer an injury when they fall, it's already too late.

So we began a partnership with Stanford. In the next slide we'll go into this a little deeper, looking at the use of the STEADY protocol stopping elderly accidents, deaths and injuries. If you could back up just for a moment. Again, sorry. This was developed by the CDC to assess fall risks and it has components of screening, assessment and intervention.

The screening questions that they use enable professionals to ask questions about whether a person has fallen in the last year, whether they worry about falling or whether others do that to screen for those at fall risk. But we wanted to go further, using those inertial measurement units to see if hearing aids could be used to assess elements of the STEADY protocol that is typically a laboratory or clinical test, but to look at various phases that I'll talk about in a moment to see if we can, number one, decrease the burden on healthcare, two the impact of falls, increase patient awareness and reduce barriers in creating a fall risk plan of care. Now please go ahead and advance to the next slide. The combination here, the collaboration rather between Starkey and Stanford has led to a multi phase project and our first publication. If you use the QR code here, you can click on that or take a picture of it and it will direct you to an otology and neurology publication that Just came out in February 2025.

Looking at the use of the three screening questions that I mentioned developed by the CDC in combination with assessment of three measures that assess balance, gait and strength. The timed up and goal measure which is a measure of gait, the chair stand test which is a measure of strength and the four stage balance test that look at where a baseline is for an individual. And in phase one, what we were looking is, as I mentioned, this is usually a clinical measure that clinicians would be observing a person as they do each of these three tests that are designed to assess balance, gait and strength. And then gradually look at a plan. If you'll go to the next slide that looks at phase one, which is really the phase one and the beginning of phase two are in the publication that was referenced in the last slide that look at in office validation with three clinicians observing the patients going through the strength, gait and balance measures then.

And we found great compliance that you'll see in the publication between the clinician and the automated scoring with the patient using their hearing instruments connected to the app with guidance and control for scoring on the app directly. And we found very good coherence between the clinician and the patient when they were in the same room. The second phase is with a clinician in the next office simulating a telehealth guided session, also with great compliance, then looking at at home unguided as the stage that we're engaged in now with the ultimate goal of providing an unguided application where patients could assess their baseline to identify if there is a risk to their balance, gait or strength. And then begin a plan with a physical therapist or an audiologist working with vestibular issues or a primary care physician to try to identify the weakness in one of those elements and attempt to improve their score on the steady protocol. With the ultimate long range goal being one of reducing risks of falls enough to potentially prevent falls before they occur.

Thank you.

Fascinating work, Dave. Thanks so much for sharing that. I think I'll have questions for you about that in terms of how maybe the hearing aids integrate into the study protocol. But I appreciate the introduction to it, so we understand what you're working on there. That's great.

Very good. Thank you. Okay, see you in a bit. So we're going to transition then to Tammy Stender, who's coming to us from Resound. So Tammy, can you give us an example of an innovation in your company's product line that meets the needs of rare, unusual patients, please?

Yes. Thank you. So Much. Susan, thanks. What I'd like to talk about today is Bluetooth low energy audio and made for AuraCast.

And although we're talking about unique and rare instances, this is becoming much, much more mainstream, we're finding. I'd like to take you through some of the history of why this was developed

and how it can really help your pat. So if we please move to the next slide here.

Well, first of all, I think we can all agree that everyone is connected in some way. And if we click forward once more, we can see that over time mobile device ownership has dramatically increased in the past decade. Direct connectivity to mobile devices and computers is something that really drives customer satisfaction for our patients. And 71% of hearing aid users are streaming audio or music directly to their hearing aids. This is something that we used to talk about as being a niche and now is becoming much, much more mainstream.

And finally, 27% of hearing aid users own a TV streamer accessory and 25% own a companion mic. So wireless accessories have been around for a while, but their uptake continues to be popular. However, direct streaming is kind of taking out the middleman in some ways and making it easier to directly connect to user devices. And these of course, are devices that people struggle with. If you're in the clinic and they're saying, I can hear you just fine in this quiet room, we've all been there.

But when they go home and they say, I can't hear around the dinner table when there's a lot of people talking, or I can't hear my favorite show because there's. It's so hard to hear with all of that background noise. So those accessories and direct connectivity really is developed to help in those situations, those special situations that unfortunately have a lot to do with user satisfaction if they're not met, please move on. Okay, so this is a, this is basically a snapshot of where we've been and where we are going. So as you can see, connectivity in all of its forms is not new.

We've had telecoils for a long time and we continue to have them. They are incredibly helpful in public venues that are very hard to understand speech, such as reverberant venues, venues with lots of background noise, et cetera. FM systems so critical for helping people in workplaces and in school environments. Classic Bluetooth really revolutionized the way that we could connect to phones, TVs, et cetera. And then proprietary protocols were developed, many of which we use today still.

Of course, these are the ones that essentially slim down the classic bluetooth protocol to what is essential to the device, streaming and then presents it. And then there's ways of doing that for Apple through Made for iPhone as well as Android streaming. But as you can see, there's a lot of options. And as a hearing care professional, that kind of makes us more into we have to know all of these and the pros and cons, which is very difficult because if you're like me, I didn't go to school to learn all about those things. And yes, I've gathered that information, but it's not necessarily where I find my strong suit in determining how to run every single phone that a patient will walk in with.

These drawbacks are no surprise to any of us. There are so many different multiple proprietary protocols available, and every patient's phone is a little bit different. And then furthermore, some of those options require more battery use and that can limit the kind of hardware that we can fit because we have to fit a certain kind of battery in. There's compatibility of mobile devices and those accessories. And then finally, there's many different protocols for mobile operating systems.

And keeping everybody up to date on the latest operating software can be a drawback when you're in the heat of the moment with a patient that's trying to be fitted with the best technology for their needs.

So the new era of communication has started and it is not deemed as something to replace what has already been there, but to extend accessibility to more people with more devices over a greater amount of time. And what that is is Bluetooth Low energy audio and AuraCast broadcast audio. So Bluetooth Low Energy Audio is a large umbrella kind of term and it was actually developed in 2020. It is not just developed this last past year or so. It's just that it was developed by the Bluetooth Special Interest Group and is making its way into consumer electronics and medical devices such as hearing aids.

The benefits of it is that it extends the accessibility and it also eliminates some of the drawbacks that we've had with proprietary protocols. So, for example, there's improved performance with Bluetooth

Low Energy Audio. You are getting the full stream with greater sound quality, lower latency, meaning that there's less of a chance for any kind of echo effects between the streaming and what you receive at the end. And then very importantly, reduce power consumption because they put in a new codec, which is a new basically kind of way of programming it so that it is more efficient than Waze were in the past. What this means for hearing aids, especially because we know many people like to have small hearing aids is that our hearing aids can be very small but create the biggest impact in terms of their connectivity performance because they don't require as much power consumption as they did in the past.

Multi streaming is available also through Bluetooth Low energy audio as an improvement over classic Bluetooth. It supports multiple device connectivity and it also enables hands free calls on Android phones which prior to with the Apple only protocols was very difficult. And with Asha streaming as well, now Android users can enjoy the hands free calls that iPhone users have been enjoying. And then AuraCast is a. It's like a package within Bluetooth low energy audio and it is an option that allows for broadcasting and audio sharing to personal devices and in public places.

And one of the most exciting things is that in the hearing industry this is now available in hearing aids. GN has had AuraCast in our hearing aids for the last to generations. And I want to talk a little bit more about what those benefits can be next here. So imagine you're sitting in this venue and you're trying to hear and of course it's hard to hear because maybe you didn't get a front row seat as many of us don't and you might be wearing earbuds, hearing aids, et cetera. Imagine where you can have one RCAST transmitter which broadcasts speaker to any kind of these devices that have that capability.

That is what the future looks like. And in fact if you advance one more, it is estimated to have 2.5 million locations offering this AuraCast audio globally by 2030. So it coexists with telecoils, it can coexist with FMS, but it is another option and it extends the accessibility to many more devices and many more

people, including those with hearing loss. So if we connect, you see that already there are several products on the market that have this already included. There are our cast assistants, ampetronic that are available.

And it has changed and is changing the ways that we can work. School systems can include more people using that kind of technology because it isn't so device specific. The focus is on simplicity for the teachers that have a lot of things on their minds and then workplace adaptation. The next PC that you own may very well have a Intel EVO sticker on it, which means that it is compatible with Bluetooth, Low energy audio streaming and AuraCast.

So what we want to do here is we want to keep furthering the industry into the future and we want to simplify the way that hearing care professionals work to remove some of the obstacles and drawbacks that we faced in the past with remembering how to do each one of those protocols, making more streamlined so that we can focus more on the patient and less on trying to make the phone work and finally improving the performance and user experience compared to what we've had in the past, and providing access to completely new sound experiences, both on a one to one basis as well as in public venues with AuraCast. So I think that might be it for me. Thank you so much, Susan. Thanks very much. And thanks for the stats on how many people are using their, their streaming.

I hadn't seen the 71% before. That's interesting. Do you, do you have a sense of penetration for Orcas specifically? Within that category? Within that category?

No, not yet, but that's a great question. And I'm. Early days, eh? Yeah, exactly. Yeah.

Yeah. All right, we can come back to that. Thanks so much, Tammy. And with that we are going to transition to Brian Taylor, who is coming to us from Signia. And Brian, I'm going to ask if you would give us an example of an innovation in your company's product line that you have designed to meet

unusual, rare, unique needs of patients, please.

Sure. Thanks, Susan. Great to be with all of you.

So if somebody could maybe advance through the slide here. I thought the question was a challenge because I didn't want to talk about features that are important but are not used maybe all the time or very often. So I focused on a unique need that I think the abundance of hearing aid wearers face and that is their ability to participate in multi talker group conversations. And I think that's a unique need for some obvious reasons. I think most obviously the talker of interest can often change and every situation can be a little bit different.

And you know, we have to rely on the intent of the hearing aid wearer to really know exactly what they want to be listening to. So the next slide I think gets at a unique feature that Signia introduced a couple of years ago. We'll call it Multi Stream architecture. It's really, you can think of it generically, maybe as effective directionality. And it's our attempt to balance improvements in the signal to noise ratio of the listening situation with preservation of environmental awareness.

And it's, as some of you may know, Signia more or less pioneered the use of near field magnetic induction more than 20 years ago in hearing aids. And one of the byproducts of that legacy with near field magnetic induction is the application or the implementation of Multi stream architecture, which is our proprietary implementation of a four microphone array. And the Schematic that you see on the left, I think is, at least for me, is a handy visual representation. Because you see what's unique about this feature is it has three front facing acoustic snapshots that detect, track and turn up the gain for speech if it's detected. And that happens even if the talkers move within the frontal hemisphere.

Then you notice the gray polar pattern to the rear of the hearing aid where that polar pattern is picking up environmental sounds, including speech. And that's a nice visual representation of why we call this

platform split processing with multi stream architecture. And the whole idea here is to balance improvements in the signal to noise ratio with environmental awareness. If we go to the next slide, please, this is another way of looking at the same thing, sort of in a serial form. The proprietary name of this feature is Real Time Conversation Enhancement.

And you see on the left of the schematic how the the frontal hemisphere is designed to detect and turn up the gain for speech, even if talkers move around and preserve background sounds primarily from the rear. But you see here how it detects or analyzes using the signal classification system to try to detect speech. Turn up the gain for speech in each one of those acoustic snapshots and then fuse it all together so that the listener has a high quality listening experience. If we can move to the next slide, please. Rather than go into a lot of details with studies, I will just encourage you to go to the Signia Professional library.

You see the link below. Over the last year or so, we've conducted several studies, two benchtop studies that show that you get significant improvement on Kemar in a simulated multi talker environment. We have at least five lab studies, some of them looking at improved listening effort, others looking at improved speech recognition and noise, and how multi stream, Multi stream architecture gives you a slight advantage in improving the signal to noise ratio in those kinds of situations. And then finally, we have one real world study that shows that by and large, wearers have a strong preference when they're listening in a realistic noisy situation when real time conversation is activated. So I'll just stick to kind of the basics here today.

And that was the feature that I wanted to talk about that I think addresses the unique need of virtually all hearing aid wearers.

Okay, thanks, Brian. That's a different spin compared to the technologies we've heard about so far. So thanks for sharing something. That's why we have panels. We see lots of different things and we'll be

monitoring the chat for questions and we can move on to our next panelist.

Who's going to be Steve DeMari from Caption Call Steve, I enjoyed hearing about your product last year. So welcome back. And how do you see products and services being used in combination? This is a new question now. Products and services that can be used in combination to meet the needs of people who have hearing conditions that are rare.

Yeah, thanks Susan. So just a little background on folks who see the, you know, the brand. Caption call our parent company Sorence and essentially our company is a global language services company that can provide language services for those deaf and hard of hearing people out there. We're providing technologies with human centric services to connect signed and spoken languages. Captioning, video relay services over video and in person sign language and spoken language interpreting, real time event captioning and post production captioning as well as IP CTs 1 of 3 depending on the statistics where you find them.

1 of 3 or 2 of 4 of every thousand newborns are born deaf depending on the site for those statistics. In some cases these are rare causes. Genetic disorders, ototoxicity, autoimmune disorders, infectious diseases, auditory neuropathy, spectrum disorder, some very rare syndrome. And then regarding specifically deaf blindness, which is a dual sensory loss that affects both hearing and vision. About three in every 100,000 births, which equates to about 0.2 to 2% of the global population are deafblind.

Go to the next slide.

With regard to Sorensen services, there's a plethora way too many to cover here today. But certainly this begs possibly for a presentation that really takes a deep dive into some of these solutions for these populations, specifically deaf, deafblind and those that are hard of hearing, sign language interpreting, captioned phones, obviously accessibility for business consulting. So those folks with these challenges

in a business setting, language translation and transcription, which we will take a deep dive into at another presentation with regard to Sorence and forum that provides multilingual translation and transcription, spoken language interpreting and then media post production. You can go to the next slide. So these services could apply to individuals with long untreated hearing loss whether they wear hearing aids or not.

Certainly those with auditory processing disorders, neurodivergent adhd, aphasia and the deafblind. How can these language services provide support? There are augmentative and alternative communication devices, tools like touch to speak tablets or communication boards which empower individuals to express their thoughts effectively. Simplified visual materials using images or symbols instead of text aids which enables comprehension and engagement. Accessible meeting tools, video calls with captioning and transcription options that allow employees with aphasia to participate fully without pressure to speak fluently.

Specifically other products out on the market there are many, but with regard to Sorensen, we investigate and provide the for the unique needs of the deafblind community, which represents a distinct group that due to the combined hearing loss and vision loss presents with unique set of challenges and experiences when it comes to communication. The deafblind community uses assistive technology in a way that intersects with the needs of both the deaf and blind communities such as these assistive technologies for blind people to make phone calls such as screen readers, magnification software, optical readers, captioned phones and then mobile applications voiceover things such as Siri, Talkback and Google Assistant. Certainly the deafblind person may use a combination of these assistive technologies video remote interpreting and video relay services, both video based services that help people who are deaf or hard of hearing to communicate with hearing people. So VRI versus VRs and used for in person or virtual meetings where an interpreter is needed in the same room or remotely.

Lumina is just one example of one of the video relay services that we provide so people whose primary language is asl American Sign Language. VRs offers a more natural and faster way to make calls. This Internet based system connects a deaf caller with an interpreter through video conferencing technology. They can communicate in ASL while the interpreter interprets the conversation into English or Spanish so calling capabilities. Unlike earlier phone communication devices, VRs lets individuals who use ASL to communicate in their preferred language and then some of the VRs systems which again we can take a deep dive into in another presentation, but specifically with regard to these services, VRs and Braille Reader Source and now provides VRs services compatible with compatible with Braille readers for the deafblind population to accompany the further expansion of telecommunication accessibility for both the deaf and deafblind communities.

So when signing up for VRs account, you essentially would be prompted to indicate if you use a braille reader for VRs calls. If you do use a braille reader, the system directs you to connect to a VRs services explicitly designed for braille readers. When a deafblind person calls VRs, the interpreter will respond by typing the deafblind person's braille reader to indicate that the message has ended. The interpreter can type GA to mean go ahead. This tells the deafblind person that it's their turn to read respond and a revolutionary video phone In October 2023, Sorenson took took advances in the video relay functions and part of this acquisition was to include a promising telecommunications app for deaf blind people.

Thanks very much, Steve. Unique product line for sure. Thanks for sharing us the overview of that. I'm just checking the chat. We don't have any questions for you at this time, but we certainly will have our discussion at the end of the panel.

So we'll thank you for your contributions and we'll see you in a little bit. And we're going to pass the stage over. Thank you to John Pumford from audioscan. So John, how do you see products and services that can get used in combination to meet the needs of people who have hearing conditions

that are rare? Great question, Susan.

Thanks. And thanks to everyone at Audiology Online for putting this together today and for all of you for attending. In terms of answering this question, you know, from my perspective, audioscan systems really are all about ensuring that instruments meet the unique needs of people with hearing loss, where fitters can measure devices to see if they're providing an appropriate amplified signal for the patient and account for any individual variability in ear canal or device characteristics that are just quite difficult to predict. Also, verification lets us enable or evaluate various adaptive features and accessories, including some of the technology heard about already today that's designed to address the patient's needs like directional mics, noise reduction, remote mics, and so on to see if they're performing appropriately. And really, at the end of the day, verification supports individualized care by informing, counseling and establishing realistic expectations around the potential audibility benefit of a device.

Next slide. Now, this perspective regarding the importance of verification, it's not just an audioscan perspective. It's also reflected in the protocols and guidelines from various professional groups, including those you see here on this slide, which clearly indicate that verification is recommended as best practice when fitting all forms of amplification with patients of all ages. Next slide. And if we look to the research literature, we can see quite a bunch of evidence to support the ability of verification to provide significant benefit for patients and providers, including some of the items I've listed here versus scenarios where we're looking at unverified generalized first fits, including verification offering improved audibility for patients in lab based and real world environments, improved listening outcomes, improve patient satisfaction, improve perceived quality of services with associated improved patient loyalty, which if we think about the challenges with today's competitive pressures in a number of these different product offerings.

It's always nice to have patient loyalty and it's great if you have a service that can offer that. And while verification may add extra time to your clinical day, if you're not already conducting it, we see see a lot of evidence to show it results in improved fitting efficiency through reduced fitting visits as well. Next slide.

And so to support clinicians ability to meet patients needs, Audioscan developed the VeriFit2 system which I think a number of you are familiar with, which continues to offer industry leading technology including the ability to measure two devices simultaneously both on the earth and in the test box. So this supports measurement efficiency and for example the ability to capture any communication between devices. There's also binaural monitor headphones which I know Susan is quite a fan of, which allows the clinicians to listen in on any measurement they're conducting, which is a great troubleshooting tool and also quite helpful as a counseling tool for family members as well. It also offers wideband measurement capability. So we can really determine whether products that claim extended bandwidth are providing an actual audible benefit to the patient through this extended bandwidth.

And there are also many other advanced testing options as well. So those could include our adaptive feature tests, a number that are unique to our company with our speech adaptive directional microphone testing, noise reduction testing, and others that can be used to tailor programming and inform patient counseling. Next slide. All of that said, the core product function is of course speech map where the output for speech is plotted on an SP hologram as you see here. And with this concept we can tailor hearing aid programming to match prescriptive targets at various speech input levels.

Or we can also use just the reflect the indicated dynamic range to determine whether a signal is audible for a patient or whether it may provide an output that might be deemed uncomfortable. Now beyond target matching, click please. The system also provides some information down below the graphs which is sometimes overlooked and can be quite helpful in your fitting decision making. Some of this

quite unique to our systems. So you'll see down in these what we call autobars data, both unaided and aided SII or speech intelligibility index scores.

And you can also toggle a button to then bring up rms error or root mean square error values as well, which kind of gives you a single metric to let you know across the frequencies that are part of the calculation. How far are you off of target? And then unique to audioscan, we also provide target ranges for each of those metrics as well to again just give you additional information to determine whether your fitting is appropriate. Now no doubt these screens are quite helpful also for counseling patients, but we've learned from collaborative research studies that we've been a part of with our colleagues at University of British Columbia that there's obviously a lot of clutter on this screen that's really intended for clinicians. And so if you click next slide, please.

Yep, there's a counseling area here, if we move to the next slide, that can actually provide a more simplified view for patient counseling and can support you in various phases of the hearing aid fitting journey. So for example, here we see two overlays that might be appropriate early on in the hearing aid fitting journey, during the assessment or selection phases when you're discussing with a patient why they're a candidate for amplification. And then next slide, we also have counseling overlays as well, post fitting or at follow up appointments where we can then import from the clinical view the aided scores where we can then contrast your treatment with what the patient walked in with early on in their journey, the unaided speech spectrum spectrum. And so this I think is also quite helpful supplementary tool. Next slide.

And then finally, beyond the advanced features and tools that I've talked about already, the Verifit does offer a number of unique fitting capabilities for certain form factors that maybe aren't fit very frequently, such as Cross or Bicros systems. And as well now the ability to objectively verify bone conduction devices where our skull simulator supports objective verification and integrated within speech map, just

like with air conduction hearing aids as well. And then with our recent release of software, we've now introduced the DSL BCD 2.0 formula which supports the ability to objectively verify softband devices and also incorporate traditional bone oscillator audiometry and your target. So at the end of the day, it's my belief, it's audioscan's belief that the verification features found in our systems really help ensure that hearing devices meet the listening needs of people with hearing loss.

Thanks very much, John. Yeah, thank you. Yeah. Bone conduction is a great example of a rare, unique use case that we have had challenges in the past. So it's nice to have some better tools.

And thank you for your work on that. We're going to. You're welcome. Okay, great. We'll keep monitoring the chat for any questions and come back to you with them at the end of the session as well.

And we will welcome Jessica back. Hi. We'd like to ask you, how do you see products and services being used together in combination to meet the needs of people who have hearing conditions that are rare? Great. Yeah, thanks again.

So, and that looks like. Here we go. Perfect. So I mean, you know, there's both rare in terms of what the conditions that patients have as well as rare in terms of what Us as providers tend to offer. So our Sennheiser All Day Clear obviously offer the opportunity to help patients that you aren't normally helping right now because they're walking out the door, they're not ready for prescription hearing aid.

And then we also have individual features in the products that can help with rare patients. And I think I'm going to need you to advance the slide for me if you wouldn't mind. Thank you. So All Day Clear comes in two styles. Both styles contain the same features and self setup.

For the patient who wants a standard RIC design with a self service journey All Day Clear is ideal because it's a standard RIC shape and it takes the same receivers as the Phonak and Unitron hearing

aids you Larry have have in your office. They get the convenience that they want, the quality that they deserve and the traditional prescription hearing aid look. But think about those patients who don't want a prescription hearing aid look. They want to wear something all day that looks cool and still meets their hearing and service needs. That's where our All Day Clear slim is the ideal solution.

It's still a rick which unlike an earbud, I don't know, I've worn your buds before. I don't like wearing them all day. This is comfortable to wear all day. So whether they want to use it, hey, just when I need it or they want to use it all day, this is a great solution for both. And it is a unique design exclusive to Sennheiser.

It's not the same as any other hearing aid out there on the market market. It has an earbud style receiver which sits at the aperture of the ear canal. It looks cool and it's comfortable because it doesn't go deep in the ear. So I don't know, you know, we've probably all tried receiver in the canal. Even if we don't have hearing loss as providers, we put them in and I don't know about you, but I don't, you know, they just be annoying after a while.

So these are really great because they don't go all the way in the ear so it can be more comfortable. The microphones are located on the earbud. So you have two microphones and they're both located on the earbud. So they're always at ear level. So it doesn't matter how far back the part of the receiver, sorry, the part that goes behind the ear sits.

It's always in. The microphones are always in alignment and there's a malleable forming wire so you can warm up that wire and shape it so that it meets their ear shape and their needs. So it's always ensuring a secure fit.

Thank you. In addition to someone who wants that look of a cool modern hearing aid, these obviously have a more consumer electronics design. So. So you know, it's just bringing more people in and giving

them access to something that they want to wear. But beyond the style, it's also a great solution for people who just have a non standard shaped ear.

You think about it, sometimes it's the top of the ear that maybe has a little harder time to fit a standard size or maybe the length. This is a malleable wire so you can shape it as needed. And. And again it is, it doesn't go deep inside the ear. We do recommend that it is for people who have moderate size or larger ears because the earbud is does fit in that aperture.

It's also great for your patients who are like struggling with that Rick comfort. Right. Like they don't enjoy having something deep inside their ear or they really can't have something all the way inside their ear. So the All Day Clear slim has a shallow insertion to, to help make that comfortable and fit well. It's also really good for patients who have dexterity challenges.

So the shorter insertion depth means that it's easier to put in. They're not trying to work so hard to get it into their ear. Of course these are fully rechargeable so they don't have to worry about tiny batteries or anything like that. And this is a one size fits all. And it's a true one size fits all.

Again because the microphones are on the earbud that it is a much easier way for them to make sure they don't need to change receivers or anything to to get the right size. These receivers are able to be changed in the office. If you want to, you can order them on the Unitron store. But. But again they, they don't need to change it for length.

Okay. All Day Clear Slim isn't just about hearing better. It's also about that better experience.

And we have our Sennheiser set 880. The set 880 is A, A great fit for patients who just need help with the tv. This is specifically designed for the TV and amplifying that TV sound. It is a wonderful option for anybody who's got really a normal hearing and just wants enhanced TV sound all the way up through a

severe hearing loss or moderately severe hearing loss loss. It fits inside the ear so.

But it's just at the aperture. So again, this is something for someone who has insertion challenges or has a non standard size ear. This is very easy to put on and take off. In fact, when they open up the, the handles on the ear, on the piece, that's when it turns it on. And simply by taking it off, it turns it off.

It is nice and lightweight and it has nice easy big buttons. So it's great for both. Someone who just can't, you know, has trouble putting things on and off. This is super easy. And then the dexterity wise.

Right. And a lot of people just can't handle small hearing aids and these are simple to use and, and easy to manage. Sometimes we see patients who have cognitive problems so it isn't a physical issue, but maybe they're are forgetting their hearing aids, they're losing them all the time or they just can't manage something like a hearing aid. You know, this is a great solution for the tv. It is, that's all it does.

It's easy, it's simple and it's hard to lose. So it's a really nice option for people who are having cognitive issues and their main. Thanks, Jessica. Watch tv. Thank you for that.

That. So take your point on the dexterity. That's a, that's a great idea. In terms of unique needs, we do have one question for you in the chat, but for the sake of giving Dave his time, we're going to carry on and we'll do that at the end. So, so stick around for that please.

Dave, we're going to pass it over to you in terms of best use of accessories, apps or software that make it easier to meet unique needs. Great, thank you very much. And I am going to talk about and expand on the topic that Tammy discussed and that is LE Audio. But maybe augmenting a little bit what she began with regards to the discussion. As she mentioned it was 1937 when the Telecoil was introduced for use in hearing aids.

And to quote Mark Twain, I guess rumors of its demise have been greatly exaggerated over this time period. And so the issue with. And excuse me, I'm of course getting a call in as we speak, so excuse me, pardon me. So the regard with regards to the demise of telecoils, it has persisted but, but I would argue that in recent years it has increasingly been used more for assistive technologies, including group situations, alds rather than telephony. As we've seen direct Connections beginning since 2014 between first iPhones and then, and then phones without the need for an intermediary bridge directly to hearing aids.

Now, we remain very, very pleased at Starkey to offer telecoil solutions for custom and standard products until we see Bluetooth, LE Low energy streaming and Auracast take over that functionality from the telecoil for many of those group situations that people do use them for today, including television use, but more commonly in those public situations. Now, Tammy mentioned 71%, according to their survey of individuals that on their products are using a television streamer. And I think similarly across the industry, the television streamer remains the most popular accessory for use when an accessory is used. But. But I would say that the accessory use is still woefully inadequate for things like remote microphones and situational use.

But with regards to that television as the most important thing, and maybe it's testimony to how much we're sitting in front of TV watching television, but it is the number one use case, I would argue for most people with accessories. And that's one area where LE Audio will eventually eliminate the need for an additional accessory because I would would predict that the next television that you buy will likely have have the compatibility for LE Audio streaming in the home with additional advantages of having more than one user that in many cases can use that in the home environment. And Tammy also mentioned, I think by 2030, if I wasn't mistaken, she said about maybe two and a half million locations, and I would argue those are the public locations because I do feel that we will see and are already starting to see the introduction of LE Audio in consumer devices that may be used for personal use as well as in public

locations. So if you would go ahead and advance to the next slide, I'll let you do that rather than me fumbling with to see whether the control is there. Now, I do want to talk about and amplify a bit, pun intended, I guess what Tammy was talking about, about the benefits of using LE Audio.

We've been using Bluetooth low energy, but LE Audio is this new standard that the Bluetooth Special interest group. It felt many years like we were waiting for Godot to see this become a reality. But now we're starting to see convergence, in particular for telephones that are Android and iPhones. And the next slide don't advance yet, but my next slide will show a little bit of the timeline of this. But we're starting to see LE Audio start to become part of the conversation.

And what it offers, as Tammy mentioned, is improve audio streaming, sound quality, more efficient use of battery life, and we're really Pleased with first the Genesis and now the Edge AI product to lead the industry in terms of battery life that is offered through RIC and custom devices with rechargeable batteries. So that we take range anxiety off the table for those patients who elect to use rechargeable batteries and in part due to improved computational power at lower battery consumption that wireless efficiency because more and more people are streaming more and more hours a day and we don't want to see that impact their ability to have the confidence to get all day battery use regardless of whether they're using DNN processing, which is a topic for a different day, or using streaming from some devices. And that universal connectivity in the past, Bluetooth Classic has been the primary way to be agnostic about whether an individual is using an Apple or Android phone. But with LE Audio, as we start to see more and more phones compatible with LE Audio that it is going to again enable more universal connectivity than what we've had in the Bluetooth low energy space in the past. And then Tammy touched on this and I'll also build a little bit on these multiple connections enabling hearing aids to be connected to multiple devices at once.

And where this will become particularly important is in broadcast audio oracast modes where in public spaces. And I'll come to a few of those applications in just a moment. But this Auracast really allows the connection to audio sources in public places like gymnasiums where they may have multiple television screens. But unless you have a radio tuner anymore to tune to the audio, this is going to enable a QR code like I had in my first segment to be able to then link the audio from multiple screens and identify which screen that you want to stream audio from. I'm a lifelong Green Bay Packer fan living in Minnesota in Viking country and in a sports bar they will have during football season Vikings on every screen, but in one in the corner they'll have a Packer screen in this.

I could be able to use the QR code to link directly to the audio of the event that I want to in theaters, movie theaters and live performance theaters. This is going to be a way again to enable those using hearing aids to be able to link directly in the public address system if it's been equipped with this broadcast mode on LE Audio. And it's really as simple as an individual wearing an LE Audio product that is connected to their Android or iPhone as these become available and just search to see what broadcasts are available, scan a code and then tap to enter and link with that audio whether it's in a museum, whether it's a theater. I think an airport is another great use case where when there are gates that are clustered close together and people are confused over when the boarding calls are taking place, it will be possible for people with with hearing aids that are compatible with this to link directly to their gate. So they're only getting those announcements regarding departures and arrivals from that gate when they're linked in that environment.

And so I think the connectivity and talking about the accessories, not only that dedicated TV streamer that requires a piece of hardware and right now in transition, we have a transmitter that is compatible with Leopard audio on the edge AI devices, but eventually I would put those on endangered species and then as I said with T coils. Until and unless this takes over and becomes as ubiquitous as T coils, we will continue to support that technology because while still low Tech since 1937, it's still when a loop

system has been installed in a place of worship or in a public space, it still provides that functionality. And that's where I think we will see increase use. The other thing and if we go to the next slide we've talked about, you know, like I said, waiting for Godot for getting this Bluetooth SIG group to agree and finalize both for hearing aids and for consumer audio. And I think we live in the hearing aid space and we see these innovations often take a while to impact our hearing aid users because it's a relatively small segment of the overall population now that more and more people are wearing devices in their ears, whether they have hearing loss or not.

As we see consumer audio begin to embrace some of these public spaces, whether it's for museum sports bars, as I said, gymnasiums where they have multiple screens, I think we can begin to look at the clock moving faster on the development and the building out of the infrastructure. And we in working with our patients will benefit from that adoption that I think is going to take place. It's going to take time to get the products Apple and Android phones also computers as Tammy mentioned, Windows 11 with the TPM chip will support streaming direct streaming from a PC to the hearing instruments using Auracast mode. And we can also already for compatible Android phones use Asha streaming protocol on devices that are compatible and Apple's Leah 2 low energy audio 2 streaming protocol. But as we see AuraCast and Le Audio taking over this, it will offer, as I said, that lower consumption, battery consumption, consumption, better sound quality, compatible with the devices for Windows 11 PCs.

As I mentioned, iPhone and Android phones when they're released and enabling as well enhanced two way audio and hands free operation with compatible products as these become available. But we're expecting to see the first compatible devices be introduced and I think accelerating into introduction this year and so I think be ready. I know many of the professionals, hearing care professionals on this call are already feeling like they have to be an Apple Genius or a Geek Squad member. But it is something that I think is going to make patients life easier for that ubiquitous connectivity that we're all looking for

with people wanting to be connected to television as well as public address systems. And I think this is going to be a a really exciting time for hearing aid users as we look to 2025 and beyond.

Next slide. Your excitement is palatable. Dave thank you. Okay, so we're a tiny bit over so I am going to cut you there and we will pass it over to Tammy, but the transition between topics, I hope Tammy will be smooth for you because you're probably going to talk some more about this as well. So over to you.

Thank you so much. Susan. Yeah, actually Dave, this is great because I love it when we all talk about the way that things are moving forward together as an industry. It really makes me excited because it just expands the way that people with hearing loss have abilities to connect. So I'm just going to keep on going with your topic.

David, thank you so much. I want to talk about a couple of the wireless accessories that are now available with AuraCast. There are currently two accessories, so if we move forward, just one slide please. The first one is a TV streamer. It's called the TV Streamer plus and it has the ability to work with AuraCast as well.

So aside from the normal kinds of things you would expect from a TV streaming accessory, it has some enhancements such as one touch pairing making it a lot easier for people to connect to your TV streamer. Let's say you had a party for the super bowl and you had a couple friends over and they were able to and they would like to use your TV streamer to hear better signal to noise ratio in that crowded kind of friend setting. All they would need to do is put their hearing aids in proximity within 5cm and it pairs automatically. So just making things a little simpler as we move on with these next generation accessories to get people all connected and furthermore it allows you to share these experiences. So I think, you know, after thinking about what helps with healthy aging, what helps people's quality of life, it's being surrounded by people, it's engaging in social interactions.

So not only does the accessory, which used to just kind of have a one to one connection with the hearing aid user, help that user, but it also opens the world up, up to better connectivity for their friends and loved ones. And with AuraCast, as Dave was mentioning, this is not just limited to one single manufacturer anymore. It's any manufacturer, be it earbud or hearing aid that has that kind of technology. So it really is an exciting time. And it's also going to help with making people feel less like that hearing aid user in the room and more like just another person that's got something, something in their ear.

And that's probably including their teenage grandson and their wife, for example. So if we move on to the next slide, we'll see the next wireless accessory that has Aura Cast. And this one is relatively new. I promise you that in real life it doesn't continue to spin around like this all the time. But in this slide it wants to show that it has a new design and it has been made sleeker and also a little easier to use than the one that we had before.

It offers a longer battery life and it has 25 meters of streaming range, which is, which is quite a lot. That means that you can be a long ways away and be able to pick up that increased signal to noise ratio when you're listening to someone using this remote microphone. And finally, it also has one touch pairing, making the pairing process a lot easier. No one likes to have to repair anything and we're just trying to ensure that the accessories are moving forward in a good direction with the pairing process by making it easier on everyone. We move on to the next slide, please.

Aside from having these developments that help the hearing aid user, it also helps transform assisted listening devices to have abilities that were never available before. These accessories had that. So, for example, if you want to use your Multi Mic plus as a way of talking to a crowd of people, you're talking to a boardroom when you're at work, you're giving a meeting to your friends, or you're even just talking around the lunch table at work, not to mention being the teacher in the classroom scenario, you can

use this Multi Mic plus as the streamer to connect not only to people with Resound hearing aids, but to anyone who has that AuraCast technology. And it is all controlled within the resound smart 3D app. So you toggle over to select a public broadcast or you keep it private because of course sometimes you just want to have those one on one conversations, like if you're in a restaurant, you don't want anybody listening in.

And we have safeguards and ways of keeping things that are meant to be private, private and things that are meant to be broadcast available to others. So we move forward. If you want to have it even either in public or private mode, you have a lot of selections. You have the presenter mode. So that's if you want to pick up your voice, this is going to set the multi mic place to a directional response for the microphone and that's going to pick up your voice.

So of course you want to have it oriented vertically somewhere near your mouth. And that is used usually for one to one or one to many when it's placed vertically to improve the signal to noise ratio to the listeners. But then you can also have it at table mode. So that's when you're sitting around the lunchroom at work and you want to be able to tell somebody this, a bunch of your friends, this really funny story, and have them all be able to listen without having to choose just one person to do. And also to be able to have group conversations.

So placing it horizontally puts it into an omnidirectional mode that is more like a dome for the directional response, which means that it's going to pick up a lot of people's voices and stream them all, which is great for those difficult groups. Group conversations. And then finally there's an audio mode. As you can see, there is still accessibility. We have accessibility to T coils through our hearing aids and we also offer it through our Multi Mic plus.

So say that you decided to fit someone with a hearing aid that was really, really small because they really wanted it, but there's no T coil in it. The multi Mic plus gives them that ability to still connect to T

coils. If they are in a venue that has T coil and they want to listen in on that, it's great for that versatility. It also offers a headphone mode and an FM mode. So if we move forward here.

I love it that Dave was talking about the airports, because I think that I have never been to an airport where I could understand the PA system correctly and easily, no matter where I was and no matter how young I was and how good my hearing was. So being able to connect to public broadcast and the place that always comes up is, wouldn't it be great if you could hear better in the airport when they're talking about your gate changing to a different gate? This is the future and this is where we're headed. Being able to connect to public areas that have traditionally been just awful to understand for people with normal hearing, let alone people wearing hearing aids is a huge advance in accessibility and connectivity. So we can do that now if the Airport has the ability to stream with AuraCast and you can use the Resound Smart 3D with the AuraCast assistant to choose that stream to be able to decide I want to listen to the B terminals PA announcements.

So it's really cool and let's just move forward a little bit. I'll show you a little bit more about how that so with iOS and Android these devices being compatible with the Resound Smart 3D app, it's available for all users. This AuraCast assistant puts the ability to choose AuraCast Streams as they become more ubiquitous around public venues. So let's say you are in the McDonald's and they have an AuraCast stream of the music. Then you go to the the gym.

But there's also another stream because there's multiple TV sets you can choose which one you want to listen to through the app. It is available to select and deselect whatever stream you want to hear and it also allows you to use that multi mic plus if you and the TV streamer plus if you want to share it just with one person or with multiple people. So public mode is available. If you're sitting around and it's all your friends, you just want to make it public within that 25 meter streaming range that everybody who has a hearing aid that can work with that or a device that can work with our cast can get into the stream

of your TV streamer plus then you might want to do a public broadcast. But if you're just trying to have a conversation with one person then you can make it private as well.

And that's through an Aura Cast password. So really it meets a lot of needs. And the nice thing about it is that it's already in the app so that you can bring that ability to your users fingertips move forward. One more as Dave was talking about, PCs are not exempt anymore. Windows 11 update supports Bluetooth low energy audio for hearing aids and allows you to take calls and have meetings through your PC to your hearing aids.

Which is just amazing because that can definitely change the way that people work in their daily lives.

Moving on. One more please.

The last thing I want to talk about is something that I find really cool and exciting. You know there's supposed to be 2.5 million public places that have Arcast by 2030 and here we are in 2025 and it's probably not at 2.5 million public places yet because that was predicted for five years from now. But already Aracast is popping up in many, many places and if you go to Google Maps and search for a business venue, you can see it pop out as you would expect. And then if you open the business profile and click on about it is now available to see if the accessibility includes arcast support. So if a person is trying to find out if their favorite Panera is going to have Aura Cast availability when they call off their number, or if they'd like to go to the gym and they want to know if that gym offers AuraCast that will allow you to know before you go whether if this is an ARA CAS location or not.

So I think that we're moving much faster than we even thought we could and it's really exciting to see the industry moving together to bring better accessibility to users.

That's fantastic Tammy, thank you so much. We will come back to you with questions at the end, but for time's sake we're going to move on with Steve and talking about accessories, apps or software that make it easier to meet unique needs. Over to you Steve.

Thank you. Just trying to get see if my video is working. So certainly seems from all of the the previous discussions, it certainly seems we're all hoping to provide accessibility for all. In the Lower east side of New York, there's a historic institution transforming how it connects with visitors from all walks of life. Using Sorensen's Forum language accessibility app to ensure visitors can be fully immersed in tours and exhibits, we can leverage AI powered language platform.

So Forum is breaking down language barriers, including ASL and setting new standards for inclusivity in cultural institutions. This is just one example. Sorenson Forum offers multilingual translation and captioning abilities and allows these institutions to enhance access to its resources while showcasing potential cutting edge language solutions to foster engagement and create more inclusive experience for guests. Through multilingual situations and steadfast commitment to inclusivity, we're leading a charge toward a more interconnected world. So Sorence Inform essentially solves the challenge by offering real time captions in 25 corners languages, 43 different dialects, ensuring that all the tours and situations are accessible to linguistically diverse on site and remote participants could jump to the next slide.

Some of the other apps that Sorensen can provide for these situations is Sorensen and Touch. You can make video relay calls anytime, anywhere with a Sorensen and Touch video. Also there is the Wavelo app which is designed for hearing friends and family family of deaf people using Sorence and Video Relay VRs experience that can allow you to see each other and an interpreter live.

Next slide, Sorence Inform, which again this is a very involved application that would probably require another good presentation in depth. But again 25 different languages so you can get functionality of

traditional communication access like CART services without any specialized equipment, language limitations or upfront costs. So you can connect with multilingual audiences through a real time AI speech translation. There's also Sorenson Express which is an on demand ASL interpreting. So for those unplanned conversations, you can launch Sorensen Express Video remotely to create an interpreting situation at an instant to connect with deaf customers and employees.

And then finally, Caption Call Mobile provides ipcts, the Internet protocol caption telephone service to eligible patients which are those with hearing loss and the need for captions to communicate over the phone. Again, Caption Call Mobile will appear to be a typical mobile call via your speakerphone and provide AI accurate call captions which appear instantly for natural conversation with no lag or and the app uses artificial intelligence as we said, so your conversations are completely private.

Thanks very much, Steve. Okay, we'll come back to you with questions at the end and we'll pass it over to Jessica. Thanks Susan. So I want to talk about more financing options that will soon be available. So 35 years ago we introduced the CareCredit card which has helped more than 39 million people.

And Synchrony and CareCredit are continuing to innovate and provide even more choices like the Synchrony pay monthly loan. This is a one time use loan with consistent monthly payments and a set set payoff date. And as patients do today, they can see if they pre qualify again with no impact to their credit score. For both CareCredit and the Pay monthly loan, all from a single application and paired with your custom link, the entire experience is quick and simple for your patients and for your staff. I look at it as a toolkit for you and your team and I also want to talk about if you want to advance to the next slide.

This is something that is is near and dear to my heart. I was born with hearing loss and I wear hearing devices. So this spurred us to last year do a large research study to look at the perceptions of hearing loss and the barriers to hearing care, particularly among the younger demographic. And additionally,

you know, we saw that a younger demographic that suffers with hearing loss, but yet they are less likely to go in and get their hearing checked. And so for this reason we created new resources developed from input of your own colleagues.

And people on the front lines every day to to reach this younger demographic. We recently created and released a digital toolkit that was inspired by this research that we did. It was a synchrony hearing loss prevention study and other resources that we have on the horizon include patient communications, best practices from your colleagues and independent providers across specialties such as cosmetic dentistry and veterinary medicine, cross knowledge share and really this is all a part of the value of care credit. And again, thank you so much for having me today and letting me talk about those, those things that are very near and dear to my heart. Thank you Tayden.

Thanks very much. It's all about meeting the needs of the patients for sure. We'll carry on with with Brian and talk about extending the range and scope of meeting those needs from your point of view. Brian.

Okay, so I wanted to briefly talk about some of the future developments from Signia. One that we've had for several years now is what we call a live neural network, which essentially uses crowdsourcing input from thousands of hearing aid wearers all over the world that allow a single wear to make adjustments based on all of the inputs from those thousands of other wares. That AI based wear adjustment is called Signia Assistant. And because there's always new data entering the system as it collects more data, it basically gets smarter and more precise as far as what adjustments it offers the single individual. And that's all available through an app.

So a patient who is comfortable and competent using an app with their smartphone is able to utilize the Signia Assistant to make their own adjustments. And you can imagine for a provider who is very busy seeing patients, if you can free up some time and allow the patient to make some adjustments in a

precise way using their phone, I think everybody's happy about that. So that's one application of AI that will continue to improve. And then of course you're starting to see many manufacturers now bring denoising algorithms or AI based noise reduction algorithms to the market which are essentially replace spectral subtraction and other types of of process based noise reduction. Some of the research out there even shows that these AI based denoising algorithms might be verging on the effectiveness that you see from directional microphones and that they improve the signal to noise ratio.

Although I think by and large directionality still outperforms AI based denoising. And of course today there are still many limitations with DNN based or AI based noise reduction. Battery drain, the size of the device, an extra chip, there's even some reports of artifacts and abrupt shifts related to how those features work. And we're in the early stages of this, so we can go to the next slide. So I don't think anyone would disagree that AI based signal processing, AI based noise reduction is really the future.

I think we're going to see a lot of incremental improvements in this area over the next three to five years. Here's an example sort of how they work. As I mentioned, these denoising algorithms really are replacing spectral subtraction where the engineers create an ideal that sort of, you see that in the middle of the schematic. And right now every manufacturer that has this, I would say they create one ideal. So for example, example.

And we call that ideal a deep neural network. And that ideal could be to make speech as clear as possible, really clamp down on any other kind of sound that we think is noise. And we, anyway, we build our neural network around that ideal. And every manufacturer that has this today has one ideal. Could be just overall good sound quality, clear speech possible.

And then once that's done, the wear soundscape, the sounds from the wear's environment are fed into the deep neural network and that adjusts the input to look as close as possible to the clear speech ideal. So this is sort of a high level schematic, I think, of how these AI based noise reduction algorithms

work. If we could go to the next slide. Well, so there's one. I think right now, as I mentioned, everybody has one ideal and if we move to the next slide, whoops.

I think what you're going to find is that as battery capacity improves, as the chip sizes continue to get smaller, I think you're going to see manufacturers, instead of having one ideal in their deep neural network, they'll have several. Maybe they can at some point boost the speech, turn up the gain for specific talkers, or maybe there can be one where they can toggle between. Or the system is smart enough to recognize that they need to optimize the quality of music, they have to make another one. Could be on the same hearing aid, improve the, and make speeches as as clear as possible. So I think that what you're going to see are these denoising algorithms.

These AI based signal processing systems become smarter and more flexible.

Thanks very much, Brian. They certainly do what they're trained to do. And there's. It's going to be an interesting next few years to see that all evolve in front of our eyes. We'll come back to you with questions.

We do have some in the chat for everybody and I've got a Few as well. So please do stick around for that. And we will move it on to our final panelist today. Before we go to the group discussion, John, from audioscan, how do you see products and services being used in combination to meet needs of people who have hearing conditions that are rare? That's a mouthful, right?

Yeah, thanks, Susan. Yeah, yeah, yeah. It's been a while since I've been out front, so I had a sandwich. I'm back. Anyways, thanks everyone for sticking around.

Thanks, Susan, for the question. So it's probably not too surprising when audioscan was thinking about addressing this question about future developments that might increase the scope of meeting needs in

the hearing industry. We're looking at it through the lens of verification and how we might increase the use of this valuable service. So one approach to increase the uptake of verification is to consider technologies that might address some of the perceived barriers that we often hear about that prevent people from conducting verification routinely. That may be the time involved, especially if you're not conducting verification already, or the perceived complexity of the process if it's something that you don't perform routinely.

And so in this regard, I think there are some great opportunities to further develop existing automated verification to target capabilities. And our version of this is Verifit Link, which is essentially a software feature that allows the exchange of of data, so that can be measurement data or control data between compatible fitting Software and the VeriFit1 or the VeriFit2 system. And so using this approach, the fitting software runs the tests, compares the difference between the measurements that are obtained and the prescriptive targets, and then adjust the hearing aids to match the targets, reruns a post adjustment verification curve, all without the need for the clinician to perform any of the manual adjustments they typically would next slide. And so, as I kind of explained that approach, it's probably not too surprising that there's been a number of potential benefits with that method. And there's been a number of research studies that have looked into this that have shown that these automated verification to target features support, for example, best practice.

Since, as we know and as I talked about earlier, verification is recommended when fitting hearing devices by various professional organizations, it also simplifies the verification workflow. So you'll see in these automated verification tools that we're guiding the clinician through the verification process step by step. And importantly, as shown by again, a number of research studies, this type of automated verification to target technology provides a significant improvement, improvement in fitting time, cutting the fitting time in half or even Less than half, but importantly all without sacrificing verification accuracy. And then of course, by performing the verification, we're now able to leverage all of the real ear

measurement or verification associated benefits that I talked about earlier today, including improved audibility for patients, improved listening outcomes, and so on. Next slide.

And so in the future, you know, from my perspective, this communication that we have currently between fitting software and verification systems could lead to other useful automated verification possibilities, and I've just listed a few of them here. So, for example, the opportunities around automating quality control or anti testing, where we could imagine a future where the test modes for full on gain or reference test settings are automatically selected, when appropriate in the hearing aid by the fitting software. The test signals are launched in the verification system for the NC tests and then based on the measurement results that are obtained, the fitting software would know the specification of the product being measured and could flag, for example, whether something passes or fails the quality control check. Another possibility we could imagine. Oh, go back please.

Could be around automated frequency lowering verification as well. And so here we could imagine a future where the fitting software launches the S phoneme, the S signal that we use for these fitting protocols, and then based on the difference of that waveform, the upper shoulder of that waveform relative to the maximum audible output frequency range, which is part of typical fitting protocols, the software could then adjust the frequency lowering control controls to provide the desired effect, cross by cross again. Another possibility here could be that we could automate when the test signals are launched, which reference microphone is activated, depending on the stage in the verification procedure, and then based on the measured response from what's coming over from the transmitter, that the fitting software can quite easily adjust the transmission strength to ensure transparency with the earlier better ear measured response. And then finally now with the availability of skull simulators which I touched on earlier for objective bone conduction device verification, and again the availability of prescriptive targets in this space, within the recent release of the DSL BCD 2.0 formula, we could imagine, just as we do with traditional air conduction hearing aids, the ability to adjust bone conduction

devices to prescriptive terms targets. Next slide.

And speaking of verification of bone conduction devices, maybe not too surprising for those of you who are familiar with our product, but we have recently developed technology to support objective verification in this space, which has made a massive impact for people who fit these systems versus the traditional behavioral approaches that were used previously. Where a few years back we introduced the Verifit skull simulator, which has been quite well Received. And then as about a month ago, in our recent 24.1 software, we've introduced the industry's first implementation of the DSL BCD 2.0 fitting formula, which as I touched on earlier, now supports verification of soft band devices and the use of bone conduction oscillator audiometry. Two major requests and needs for those clinicians who fit infants and young children, for example. So there are quite excited for that opportunity.

And while we're, you know, happy with where we are at this point, the, the reality is the current tools are unfortunately only applicable to a subset of bone conduction devices. And it's really those that can be coupled to the abutment of the skull simulator that you see our little Star wars character in the test box there. So, next slide. And so to increase the range and scope of verifying all bone conduction systems, including implantable systems, which are becoming more and more prevalent, head worn skin microphone technology that measures skull vibration is a promising area of future development. And there's actually prototype versions of this technology that have been recently investigated by several researchers supporting the concept as a promising method of verifying all bone conduction devices.

Click please. And from our perspective, this is a technology that could build off of the test box skull simulator concept, right where each of these systems are measuring vibration and force plotting things potentially on an flogram or force levelogram. But instead of conducting measurements in the test box, now we're conducting the measurements on the head. And so altogether the skin microphone technology would provide clinicians with the opportunity to leverage the benefits of objective verification

with all bone conduction devices, which is quite exciting and using approaches similar to air conduction devices. So I really, I think it's an exciting future development possibility.

Thanks very much, John. Those are some powerful new accessories. We're going to invite our panel to come back on together now and start mining through some of the great questions that have come in and have some discussions, discussions and I think there's some places here where we can bring some of these technologies together. I'm going to start with some of the questions that have come in from the people who are attending today because this is really for them and some of these are more specific to. I'm getting an echo to particular technologies.

So I'm going to just go through those quickly to make sure people get their questions asked. So first off we have a question around the Sennheiser programming and this I think gets into meeting unique needs. So if you wanted to, to go beyond the self fitting and you wanted to do the professional fitting. Could you please, again, for us, Jessica, just explain what fitting software gets used if you want to further customize those devices, please? Sure.

Yeah, no, that's a great question. Thank you. So basically you just hook them up to the Unitron True Fit software and when you hook them up, it will ask you, do you want to unlock the devices? You simply say yes. And then you will have access, access to the fitting software and you can program them so you can run NAL NL2, so you can fit them to NAL and L2 as well as you can run the feedback manager and adjust the gain, which also then adjusts all the other features.

So it'll adjust the MPO and the compression ratio. When you're adjusting the gain, do you have full access to the normal, normal features that that would offer? So if you want to have any symmetrical fitting or if you wanted to increase the strength of the noise reduction, just as examples, you can do all the things you would do normally. So these are OTC and we wanted to leave certain things for say prescription hearing aids. So there are things that they can do.

Again, it's the, the gain, the feedback and nal. There are some things that the patient can do or that the provider can help them to do in the software to change some of those other features. Features. But if they're looking for say like full customization, that's a great way to distinguish between say what a prescription hearing aid does and what a premium, what our OTC does. Yeah.

Okay. Can you, can we adjust the noise reduction there though? Just that one specifically. No, not the noise reduction. Okay, so there's a break point then between a fully featured hearing aid.

Okay. Correct. Yeah, it does have two environments. So it does go in between a quiet and a program. Speech to noise section.

Yes. Great. Okay, next really product specific question is what is the pickup range of the oracast compatible multi mic microphone from Resound, please? Okay. Thanks for asking the question, Tatiana.

It is not exact, but I would say that for practical use, you could talk about for patients 2, 3, 2 or 3ft up to about a meter. We don't want it to extend too far because then of course it's just amplifying the entire rest restaurant. But yes, you need to have like a table set up where the person people you're talking to are within a few feet from you. Good question. Okay, thank you.

Okay, so then there's some other questions that I think are going to start to integrate across and we'll come back to the chat as well, but one of them talks about whether or not we can use the Caption Call mobile app while streaming phone calls. So that sort of brings together the idea of streaming, including potentially Oracle with Caption Call as a service. Can we use them together? Is it one or the other, that type of a concept? Yeah, good question.

We are currently in the process of working closely with the oracast technology on our mobile app as well as our home line. And I believe at this point there will be that capability. There are some other limitations with regard to connectivity with Apple Watch for example. But right now the essential solution using Caption Call mobile app is using your speakerphone and if you want to pair with your hearing aids, yes, that is capable. Right now we work closely with the provider to enable that if necessary, our installers work will help the consumer do that in their home actually if they have hearing aids with regard to connectivity, so we'll help them with that connection and they can use the Capture Call mobile app with their hearing aids.

Okay. And that could go both directions. It could help someone who is a patient at a hearing clinic to have accessibility to what they're hearing through one of your applications. But it also could go the other way where if maybe I'm listening to an interpretation from a scientific language interpreter through those, that, that service that you provide, I might be able to listen to that through an oracast compatible device. But that might even be mediated just by my computer too.

Right. So there's all these combinations. Yeah, there are a lot of combinations. And, and yeah, but oracast is definitely. It was, it was good to hear this, this commentary today.

But it, but oracast is, we're, we're working closely with, trying to get that, that connectivity with all, all of app applications as well as other other tools. Okay. I appreciated the, the comment that was made earlier. There's, there's a lot of evolution of product from all of you that you're talking about. And as we as service providers have to try to learn how to use these new systems and get them paired with individual people's phones and people come with all manner of phones that creates this, you know, need to, to have good strategies for how to make our way through that.

John, you touched earlier on the listening headphones that come with the verification system. You and I have talked before about using those. While we're pairing up devices as a troubleshooting technique.

That's not really a verification thing, but it's kind of handy. I was wondering if you could speak to that for a moment.

Well, I was going to plug your. Was it your audiology online? Was it 20 questions? I think you spent a lot of energy there kind of talking through all the, the possibilities. Right.

With the headphone technology for troubleshooting and for counseling. So who haven't read that or seen that, please go take a look. I think you'd find it quite helpful. But you're right. I think using these headphones allows you to listen into any measurement of the system.

So that can help trying to understand what are the indicator tones that a patient might hear, for example, when streaming is active or when batteries are low. Just also to confirm things like, you know, is the device actually talking to the accessory that it's supposed to be paired with? And then as you know, sometimes there's benefits in involving family members in some of these listening opportunities, kind of that patient centered care approach. Right. So this is also great.

More in the pediatric space where you have family members who need to understand how technology might work. Or in the case of, let's say, for example, frequency lowering technology, which by its definition introduces some distortion into a hearing instrument which some might interpret as a defective product. I think that provides an opportunity for the clinician to educate the family member that this is what it should sound like when it's working properly. Yeah, Lots of applications there. Yes.

The one that pertains, I think, to a lot of people on this panel is getting, getting devices paired and learning how to pair new technologies when they come out as clinicians so that we can practice and we can learn how to do that. And listening over the headphones while you're checking out a hearing aid is a nice clean way to do that. You can adjust the volume control to your own hearing so that it's at a comfortable level for you, which I like when I'm working with a high power hearing aid, so I can turn it

down. But it's nice to do that when you don't have the patient sitting in front of you. Yeah.

Just doing the practice and learn. There's a lot to know. There's a lot to know. Yeah. Okay.

So in terms of the. I was wondering if we have tips and tricks from those. It sounds like many of us have. Have. I've certainly had some early experiences learning how to use oracast devices and a lot.

We have some experts on the panel here. Any tips and tricks for things like providing full rich sound quality for music streaming. Things like, you know, there's the straightforward airport streaming where there's no live talker in the environment. I think It's a little more complex when we're going to maybe watch a football game together with our and the live signal is in the room and the stream signal is in the room and they're not kind of arriving at the same time. So any tips and tricks on how to make that go really, really smoothly for people with the first time maybe that they if they're not aware of maybe some of those bumps in the road pitfalls or things to be aware of.

Dave, I see you've got your hands up. Yeah. Just one comment first about the adjusting the sound quality for initial use and then perhaps with regards to switching devices as more and more people make may want to switch from one device to the next. So if I may 1, I think one of the things that we've recognized is that people want to adjust the sound quality. The end user does.

So within the app we have an equalizer and without going crazy, you know, low mid range and high frequencies are good enough for many people to be able to adjust independently of the acoustic processing for the stream streaming levels. And I think that's one way to provide training wheels with an easy to use equalizer that they can go in and adjust streaming levels independent. The second issue just relates to I'm a Mac user and an iPhone user and an iPad user and if I'm on a teams call on my phone and then I transition to the computer and then to the iPad, all in close temporal order. One of the issues is improving that seamless nature of transitioning from one device to the next. In the past with

Bluetooth low energy, using the Leah protocol often or the Android, we would have to forget a device and then pair it to the new device.

And that isn't a desirable user experience. One of the things that I think is really nice about even the early days of LE Audio with, with this is that you once you pair to your phone, your iPad, your computer one time, then it's a matter of not having to forget as you have in the past, it's been linked to that device. The worst you have to do right now perhaps is shut off Bluetooth on the device that you're currently streaming on, then focus your attention on the next device from the, let's say the phone to the PC to the Mac and then I just turn the, the, the Bluetooth on on the Mac and cycle it off and on and then it will recognize that it has previously been paired. So that's streamlining the process. I think we still have a ways to go and to mimic let's say Apple I think has the best UI with that by instantly recognizing as I switch from my phone to my Mac to my iPad, it picks up the audio and it tracks travels along.

That's our intention is to make that as effortless for the individual, particularly for those who are a little uncomfortable with that pairing process is it's only the one time that they have to go in and do accessibility hearing devices pair and then simply toggle between those devices. So sound quality are simplified. Great. Okay, so I think Tammy probably has something to add. You guys both had a lot to say about oracasco, I hope.

Yes, I just wanted to add to what Dave was saying and also the person asking the question. If you find that you would like to hear more about more from the TV and less of the chatter around you or conversely more of the people around you and less of the tv, the app is outfitted with a mic streaming balance and you can change that within the app based on the situation you're in trying to give the user a little more control. Okay, so if I was hearing the oracast stream and the, the actual loudspeaker acoustic signal from the television and I'm hearing them both because I've got vents in my, my fitting and I'm, I'm experiencing a delay between those, would you recommend that I change the mic balance

to maybe emphasize the Orcast stream so that I'm not hearing so much or is this just a vent problem? You should not be hearing any echo effect because one of the benefits of that streaming is that the latency is so low that it is not perceptible. So it will not be perceptible as a, as a delay.

And what I was addressing maybe was a different question about how to hear more environmental sounds around you. Yeah, no, I just was also thinking of, I guess a problem that we had with some oracast consumer grade headphones. It wasn't a hearing aid and we did have a noticeable delay and we were wondering if that if there were other troubleshooting advice that you might, might have. Okay, well if that does occur and of course like, like you say with all of these different TVs and such, there may be differences that cause greater delays based on the source material and that could be where the latency could be increasing as well. So one thing that you can do on the TV streamer plus is you can change the inherent delay of the pickup from, from the source to the TV streamer plus and that can help minimize that delay if it's Coming from the source in terms of the open fitting and minimizing any kind of delay, if that is something that someone was saying, you know what?

I've just tried everything I can with my TV source, with anything that I could do with mic streaming, balance, then perhaps if they were a candidate for a more closed fitting, I might consider closing up the dome a little bit. Because. Because of course, that will eliminate that problem completely. So probably the first thing to check on is if the source is the. Like the TV itself or the stereo is where that latency disconnect is coming from.

And then if that's not working and you've tried everything else, then you could potentially try a different dome. Okay. All right. So in terms of speediness of things, Brian, I just wanted to. To see if you could comment on the speed of transition between the multiple lobed directionalities that are simultaneously in your product that you described.

Like, how quickly can it switch between talkers in conversations? I mean, it's. I don't know the exact number, but it's seamless and not noticeable. There's no gap, there's no dropout, there's no artifact. So it's happening thousands of times per second processing.

And is it even switching, really? Because if it has multiple directional beams at once, does it need to even switch or is they are they're all just there at the same time? That's a great point, Susan. It's not really switching. I mean, it's kind of hard to.

Into the system to. Sorry, I think that was my age talking there, to be honest with you. I was thinking switching, but I have to change my mindset about it, I think, but. Okay, great. Okay.

A couple of consumer focused questions, I guess, for our services rather than our hearing technology. People that are on the panel today around how patients gain access to services and advocate for themselves. So, like, if we think of the caption call services, is that something that patients need to be aware of to access on their own, or is it something that you're hoping that audiology and hearing clinics will recommend to their patients or offer in some structured way? I don't have direct experience with that because of the country in which I live. So I'm gonna.

I'm just. It's an naive question on my part. And also from one of our chat people, is Steve still here? Well, I'll, I'll pipe in. With regard to our service, I mean, we're.

We're essentially, for us, it's an awareness campaign. Ours is FCC regulated. It's U.S. based. U.S.

alaska, Puerto Rico, Hawaii, Virgin Islands, a little bit. But federal program awareness is really how we get the word out. And we work very closely with providers. So the provider is a very close connection for us to get the word and refer their patients, even though there can be a self referral pathway as well. So we're in a position to help people be aware that the services are available.

Correct. Great, thank you. And then I think those. We've had some questions get answered directly on the chat. I'm just seeing what's left.

And so we've got one idea being raised around whether or not the broader range of service of signal processing that was talked about today is going to mean that we're not always as speech focused as we've been in the past and whether we need to think about other types of signals. I think many of you touched on that. So welcome to comment on that if you wish, while I'm having a look at whatever other questions we're left here. We got that one. We got this one.

Okay, I'm gonna. If there's not a comment on that, I'm gonna bump it back over to Dave Fabry. In terms of the slide that you showed on the integration of hearing devices within the STEADI protocol seemed to suggest that the hearing aids were gonna be integrated into that at some point, but I think you kind of talked more about the steady protocol itself as an assessment battery. Is there a hearing aid functionality within that project that you're. That you guys are working on in terms of having the hearing aid aid help detect if someone is at risk for falls, or is that a future?

Absolutely. And obviously with the time, I couldn't go into the detail as much as I liked, but the link that I put in the QR code addresses in great detail in the paper. But yes, you'll recall that in 2018, we in inserted inertial measurement units that were capable of monitoring physical activity and could do steps and stand and movement. And that same inertial measurement unit between a binaural or even a monaural device could be used to provide a movement signature, if you will. We did that initially for falls, the type of falls that those at risk would have falling.

But in addition, we can have gyroscopic function, if you will, X, Y and Z to tell motion, to tell gate, to tell balance with, with great precision. And actually that mirrors the ability of a human observer scoring the steady protocol assessment for balance, gait and strength. We actually incorporated the movement

signatures when incorporating those subtests of the actual assessment of Fall risk for balance, gate and strength of individuals. And then in multiple phases. As I discussed briefly, the idea is first looking at a monitor in the same room with the person, then in a telehealth in an adjacent room.

So we weren't placing them in an unsupervised state where if they fell and we had no one fall in the population. And in that collaboration with Stanford, we looked at 250 participants age 55 to 100 on that supervised either face to face or in a telehealth environment with the objective of seeing could the automated scoring of a timing of how long they can balance on one leg or balance with feet astride or the getting up and moving in a chair or getting up and down in 30 seconds, how many times can they stand and sit. Then the automated scoring is available on the devices when they're wearing them and they're connected to their smartphone. And even the instructions and the scoring for the test are incorporated in Edge AI right now. Great.

That's great. That's a lovely addition. Thank you for clarifying that. I know I've got one or two more little questions, but I'm going to check in with our colleagues at Audiology Online because we are pretty much at time and pass it over to Christy, I believe, to see if she has any final comments for us today. I'll thank you for your time while she's coming back on with us and for your contributions to today's panel.

Thank you so much for all your thoughts and work. Thank you, Dr. Scollie. Let's go ahead and advance to the very last slide just to remind the participants as we get to the top of the hour, should they wish to earn CE credit, just reminder to complete the multiple choice exam. And at this time we'll go ahead and just leave the classroom open for those of you who need to log off.

In terms of the members. This concludes the content portion of the presentation and we'll just stay on for the last remaining two questions that we will feel to the panelists. Back over to you, Dr. Scollie. Okay, I actually just had one question.

In terms of the Sennheiser product that had the shallow insertion microphones on the earbud configuration. I thought that was interesting. Did you have to redo your feedback management algorithm? And I'll ask the same question to resound if you want. In terms of anything that has the microphone so close to the receiver, both of you have technologies like that.

Seems like exacerbation of feedback pathway could be an issue there. So does the signal processing get adapted for that I guess is my actual question.

I mean overall it is new processing compared to it is a SYNOVA technology. We do use a lot of SONOVA technology in it, but there it is certainly adapted for both the shape and the self fitting method. We are not seeing significant feedback with these, nor do we have any returns which would suggest that, you know, we're having a lot of feedback. It is a more closed dome, so. So that tends to, to help as well.

Yeah, so I'm not sure if there's a specific change in the feedback algorithm used, but it is effective and, and we're not seeing, seeing challenges with that. Yeah, the closed dome should help for sure. Okay, that's good to know. Thanks. And I guess I could have the same Marie question.

Go ahead. Yeah, I was thinking that you were talking about the Marine Mic and for the Marie Mic. With the launch of the Marie Mic, we had to improve upon our DFS system, essentially creating a third pathway for that third mic so that the phase cancellation and constrained adaptation could be be accomplished for having a mic that is so close to the receiver. So with the addition of that Marine Mic, there was a new DFS system that was launched at the same time and is applied if you choose the Multi mic in a fitting. In addition to the Marie Mic, we also have, I'm sorry the Marine Mic, not the Multi mic.

You also have the option of course of a standard receipt receiver. Because the Marie Mic is designed for certain hearing losses, I don't necessarily think I would put a Marie Mic on every severe to profound

person. I found there are some constraints because we want to make sure that the feedback is not going to be a problem. So kind of a two parter DFS was improved and it still has a fitting range that is appropriate for the Marie Mic. Okay, so for both of those we're being more ambitious with our microphone placement, but we have to bear in mind that we, we have to balance that with the rest of the fitting as well.

So thank you for commenting on that. I think that pretty much wraps up what we wanted to cover in terms of Q and A and our time here today. So thank you so much to all of you for being a part of today's panel and Christy, over to you to conclude for today. Wonderful. Thank you all.

I want to just appreciate your time and your expertise and we really appreciate all the panelists coming on and returning earning for our fifth Industry Innovation Summit in this roundtable. We hope you all have a wonderful day. Thank you. Thank you so much. Bye everybody.

Thanks so much. Thank you.