Captivate - A Full Family of Rechargeable Hearing Instruments

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Partner: Sonic

- [Erin] Good afternoon, everyone. My name is Erin Reichert and I am the Director of Professional Services here at Sonic. I am thrilled today that I get the, that I was picked, that I got chosen, if you will, to present to you our Captivate product introduction. We are launching today, our Captivate 40 and 20. And this is gonna be a long course 'cause we have so many amazing things to talk about. But I think that you will, at the end of the day, really walk away recognizing Captivate as an essential, important product offering that you are able to deliver to your patients. When we take a look at the learner outcomes, again, this course is available for continuing education. At the end of today, we want to be able, we want to make sure that you are able to describe how SmartCompress technology can control compression, in speech-in-noise environments, and control gain in non-speech environments. I also want to make sure that you are able to explain how to manage acoustic feedback with the Adaptive Feedback Canceller Pro in Captivate hearing aids. Finally, I'd like you to be able to list and describe all of the available features and technologies in Sonic's Captivate hearing aids. Well, that's a big undertaking. Those are a lot of major heavy learning outcomes, but I feel confident that we're gonna really seal the deal on all of those learner outcomes, and even more to come. Here at Sonic, we love to introduce our products with a video, and so we'll get that playing right now.

- [Narrator] For over 20 years, Sonic has offered technology that brings the magic of everyday sounds and conversations to people with hearing loss, making their lives the richer for it. Now comes Captivate, what life sounds like. The most advanced realization yet of the Sonic 4S Foundation. Sound that's natural. Speech Understanding in Noise, simplicity in everything we do, and style that stands out. Built on the SoundDNA Platform, Captivate brings new capabilities that enhance the hearing experience. Our latest innovations include Adaptive Feedback Canceller Pro, eliminating feedback automatically, so patients can live each day with fewer interruptions, and the miniRITE T R with a built in lithium ion battery to power patients

through a full day on a single charge, even while streaming audio. Charging is fast, reaching full capacity in three hours. The SoundDNA Platform also features SmartCompress, an adaptive compression system that provides natural and detailed amplification, and more listening comfort. Speech variable processing works with SmartCompress to help patients hear speech and sounds in the environment with clarity. Our SPiN Management system highlights conversations while keeping distracting sounds to a minimum. Binaural Noise Management balances sound from side-to-side to offset loud noises that affect one side more than another. And for patients who also suffer from tinnitus, a builtin system of broadband and nature sounds can help to provide relief from this persistent distraction. Captivate lets patients connect wirelessly to a vast array of music and entertainment. The SoundLink 2 App adds discrete control options from a smartphone as well as If This Then That integration, to connect hearing devices to other devices on the Internet of Things, while additional accessories add to the allure of Captivate. And with a rating of IP68, your patients can be sure that their devices will be protected against dust, sweat, and moisture. What's more, Captivate is available in a variety of models, technology levels, and colors. It all adds up to sound that's natural, Speech Understanding in Noise, simplicity in everything we do, and style that stands out. Captivate, what life sounds like. Contact your Sonic sales representative to schedule a product demonstration today. With Sonic everyday sounds better.

- [Erin] I absolutely love our animations and I am that weirdo at the end of every animation, is sitting or video product instruction video or technology demonstration. I'm sitting here at the biggest smile on my face because I get so invigorated and re-energized after I hear all of the amazing things that I know Captivate can do. And with Captivate, we are truly capturing what life sounds like. Again, everyone has heard this from me, maybe, I don't know, 8,000 times, if you've taken my courses on Audiology online. I continue, and will always continue, to talk about our 4S Foundation here at Sonic. Sonic is dedicated to improving life through enhanced hearing by

constantly, laser focused, on our 4S Foundation. Sound that is natural, Speech Understanding in Noise, simplicity in all we do, and style that stands out. With Captivate, that adds up to a better hearing experience. A better hearing experience, a better experience that our end users are able to connect to their families, to their friends, to their workspace, and that's, it just makes such an impactful statement. Now, from clarifying conversations to streaming online entertainment, Captivate immerses patients in the sounds of life. So, you're used to, for people that have taken our courses before, this is an image that you're very accustomed to seeing. This is our SoundDNA Platform. And all of the different icons here reflect different pieces of Captivate. I see here we have our IP68 rating. I see we have rechargeability. I see we have our EXPRESSfit Pro. We've got our IFTTT with our dual radio system, low frequency enhancement, there's so many things that make a Captivate deliver exceptional sound quality. And we're gonna talk about them today. So, let's quickly reflect back on 2019. With Captivate's introduction in 2019, we had so many new things and exciting technologies to offer, we have more processing power, the chip itself, way faster. We have a new algorithm with our AFC Pro, which is so good. Our new setting of SPiN Engage. We had a new feature, our lithium-ion rechargeable solution. New benefits with SmartCompress, a robust offering. Four models, three different technology levels. Here you see in this image you have a miniRITE, miniRITE T, T is for telecoil, miniRITE T R, that's our rechargeable solution, and our BTE model. But who are we kidding? That was so 2019. So long ago, right? Now in 2020, we can bring those offerings to even more of your patients, with our greatly anticipated expanding Captivate lineup that includes two additional technology levels, our 40 and our 20, in our basic and entry level technology tiers. All four Captivate models available. So, we have our miniRITE, miniRITE T, miniRITE T R, and our BTE105, in both lower price points. There's a Captivate, truly, for all of your patients. With anyone from up to a severe hearing loss, really, who need a behind the ear solution. Besides all of this, we have a refresh new app design, which is available on Google Play, as well as the App Store. We'll talk about that in a few moments, but this is a heck of an offering.

This is 2020. And more important than anything in our world economy right now, at this snapshot of time, we need to have a product that can help our budget conscious end users out there. And Captivate 40 and Captivate 20 is going to do exactly that. So, getting back to sound that's natural. I love this image because you can almost hear nature in this picture. Look at how pristine, and that body of water is. It's quiet, it's peaceful, you may hear birds chirping, you may hear a boat on that lake later on, who knows? But you can see that natural life and that natural moment that you're able to experience with Captivate. Listen with ease. With Captivate, Sonic delivers a natural sound with so many different technologies in play. We have SmartCompress, Adaptive Feedback Canceller Pro, Frequency Transfer, Extended Dynamic Range, SmartMusic, a lot of things that really, we can earmark, if you will, we can pinpoint, to ensuring that sound is natural. I always tell, what I tell my patients when I was spinning products, a hearing aid shouldn't sound like a hearing aid. Yes, it's coming through an amplifier. Yes, it's a mechanical signal. But if you have great technology, it sounds natural, in my opinion, and Sonic with Captivate absolutely delivers.

So, SmartCompress. This is a big one, right? This is available in our Captivate 100, 80, and 60. As we learn about Compo. As we learn about SmartCompress, please know, this is a premium feature. Unfortunately it is not available in the 40 and 20. However, the 40 and 20 do offer Phoneme Focus and Envelope Focus to optimize the compression strategy. So, just to keep that in the back of your mind. SmartCompress, this is our configurable adaptive compression system for intelligent amplification in noise. This is going to deploy natural detailed amplification for your patients. So, let's talk about our most recent solution. So, we have deployed Speech Variable Processing. A lot of us here at Sonic like to talk about it as SVP, to apply amplification to Speech in Quiet. Well, SVP is gonna measure and apply the gain to the wideband acoustic signal. It doesn't break it up into whole bunch of different frequency regions, and it uses Phoneme and Envelope Focus to address auditory resolution needs. Guess what? That was great. SVP really does a phenomenal job of capturing the entire signal,

versus breaking it up into all these different pieces, taking an average of an average, of an average, of an average, and then trying to put it back together. It does an exceptional job. We've also deployed Environment Classification to assist SVP in identifying those ever changing environments. Are we in speech? Are we in noise? Is it speech-in-noise? Is it wind? What's going on? And again, that environment classification system did a really, really nice job. But in other words, SVP was optimized for Speech in Quiet. And when you take a look at the competitive landscape out there, most of everyone's digital signal processor, that DSP, is optimized and designed for Speech in Quiet. However, SVP with SmartCompress, that's where it gets special because we optimize for all other listening environments. It allows us to intelligently overcome the challenges associated with rapidly changing listening environments for a natural instinctive hearing experience. Because we are doing SVP with SmartCompress, we don't even need this Environment Classification any longer. So, obviously, your next question is, well, how does Sonic do this? How, how are you able to, when the competitive landscape can't execute this? Well, it's easy, in our opinion. We're using two estimators, two, a signal-to-noise ratio level estimators, compared to everyone out there is using a traditional system who's using one. We have our fast phonemic estimator, which in this image you can see in a green, is the green line, and then we have our blue slow-term, or slow long-term estimator. By using these two systems together in tandem, if you will, we get a truly accurate measurement of the environmental changes in real time. Real time here is really important to me, we here believe, at Sonic, in the cochlear amplifier model, and with this configuration we know things are happening rapidly quickly. Rapidly quickly, so real time analysis is paramount for us being successful.

So what SmartCompress is gonna do is it's gonna control the compression in speech-in-noise environments, but also control the gain in non-speech environments. There's two focus things that we're working on here. With regards to speech-in-noise, we're gonna adaptively vary the compression and determine what is needed. Does it

have to be increased, decreased, more linear? What needs to happen for more or less noise in the output? With regards to gain, we're gonna adaptively limit the gain when speech is not present. And this is a huge comfort feature. We're gonna determine the occurrence of quiet and noise only situation and apply the less gain to the input. Think about if you're sitting. Let's see, if you're on an airplane and there's no talking but an airplane engine is super noisy. Well, the cool thing is is Captivate, in our premium level offer, we have an airplane program, but a really noisy environment like that, you have to be able to control the gain in the non-speech environment, otherwise it can be overwhelming. It absolutely can be overwhelming. So, in that high signal-to-noise ratio, here in this example, Speech in Quiet, SmartCompress does not activate. It does not activate. SVP is gonna apply the prescribed gain and compression as designated by the selective fitting rationale, along with any fine tune adjusting that has been done by you, the hearing care professional. So, when there's Speech in Quiet, we don't need to engage SmartCompress. Which makes sense. Now, let's talk about the antithesis of that, that very low signal-to-noise ratio. That quiet in noise only environments, now again, no speech. SmartCompress via gain control applies less gain to the incoming signal. This offers greater listening comfort, it's all about comfort. If the patient is not comfortable in their hearing instruments, they are not going to want to wear them. They absolutely will not want to wear them. So, we have to make sure we can offer great listening comfort in non-speech listening environments. In the fitting software, you can select minimum, medium, or maximum to limit the gain up to six dBs. Now, here's where the magic, here's where the magic comes into play. So, in the speech-in-noise environment, you have SmartCompress via the compression control to reduce compression, minimizing amplification of noise following short pauses in speech, or even between those phonemes. When you do that you're improving the output signal-to-noise ratio. This absolutely supports complex, you know, listening, or listening comfort, in complex environments. Wanted to note here, in the same software, you can select maximum comfort for the most linear response, maximal audibility for those who can tolerate more noise, or balanced, which is really an optimal

mix between comfort and audibility. The vast majority of fittings that we have seen out there, really are selecting balanced, because again, we want that hearing instrument to function without the patient ever having to do, make an adjustment, ever having to do something, either at ear level or via the app. We want them to put it in and forget that they even have it. And that balanced setting really does a tremendous job.

So, SmartCompress. You've heard us use these phrases quite frequently over time: automatic, adaptive, inflexible. It absolutely is automatic, it is processing a very robust signal analysis of all environmental changes. Again, are we in a quiet environment, speech-in-noise, speech environment? Are we noisy on the golf course? What is happening? That hearing instrument is gonna react instantaneously, not based on a rigid environment classification, saying you can only be in this place, you can only be in this place, you can only be here. Because, guess what? We are in a rapidly fluctuating world that we live in right now, and you have to have, in our opinion, you have to have a hearing instrument that can, kind of, keep up with the times. It is absolutely adaptive, it tracks ongoing changes in a signal-to-noise ratio, uses that SNR information to guide adaptive compression system, it controls amplification based on the signal type, and intelligently adjusts the gain. Super flexible. I'm so strongly believing in flexibility with our product offering. It is easily personalized. Our fitting system, our fitting software, is the EXPRESSfit Pro, and there are so many tools that you have as the expert, as the hearing care professional, to really execute what you need because that's what your patient needs. Nobody knows your patient better than you. You are the expert of that person who's sitting right in front of you, and we know that you are able to take care of their needs based on what they have going on. Great resource here for you. I strongly, strongly encourage you to check out Sonic's Spotlight paper on SmartCompress. There is a whole host of information there for you to learn more about this technology at great length. It is incredibly user friendly to read. We have courses specifically on SmartCompress on our tremendous partner, Audiology Online, take a look at those courses, take a look at the article, this is a system that's really exciting. It really is.

Now, I'd love to spend some time with you talking about, quite feasibly, in my opinion, one of the neatest features that we have offered in our hearing instruments in quite some time. And that is our Adaptive Feedback Canceller Pro. Now, you'll see here on the screen, it is available in the Captivate 100, 80, 60, 40, and 20. That is your premium, advanced, mid level, basic, and entry level technology. I strongly encourage you to take a look at the competitive landscape there and to see what other manufacturers and what other competitors out there are offering in this basic and entry level offering because when I take a look at it, Sonic were blowing people out of the water with the features that we deploy in Captivate. And Adaptive Feedback Canceller Pro is absolutely one of those features.

So, you can think about this. As a more open fit with less risk of feedback. You know, I'm that person who used to, when I would manage the tech support team, I would get calls with feedback. And I would tell our customers, anywhere across the globe, you're gonna get feedback in a hearing instrument like the sun comes up and the sun comes down, because when you have your microphone and your amplifier close together, you have a chance of feedback, if you don't have a good feel. The interesting thing is our engineers totally took that ability away from me. We cannot get these hearing instruments to feedback. They are impressive. They are so great. But what's really important to me, is we're not sacrificing the gain in the instrument. No speech, important speech signals that we need in those target and the gain that we're offering, we're not willing to sacrifice it with our hearing instrument. We're not willing to sacrifice, you know, sacrifice why they're wearing a hearing instrument by dropping the gain at 1500 hertz and nothing out. Our hearing instruments perform incredibly well with our Adaptive Feedback Canceller Pro. This is a new algorithm for us. We deployed this in our 2019 product offering with Captivate on the SoundDNA Platform. And you can think about this as really, it's one feedback management system, but there's two technologies working together that really make the magic happen. So, our AFC Pro advantage, you know, AFC Pro, Adaptive Feedback Canceller Pro, we like to shorten

things here, and at Sonic we love acronyms. but it's really a supplementary system responsible for managing feedback associated with sudden, unpredictable changes capitalizing on the success of our exceptional Adaptive Feedback Canceller that was found in Enchant, that we use with Enchant, that a lot of people have had great success with. It uses spectral and temporal modulation cues to proficiently eliminate feedback caused by quick movements that alter the anticipated predictable pathways detecting feedback and then quickly removing it. What is gonna give this? What is what is the result? Because we like to hear, at Sonic, we talk a lot about features, benefits, and values. Well, you're gonna have fewer disruptions and interrupt, and annoyances of feedback in incredibly changing environments. So, put that winter, you know that winter cap on, take the hat off, you're not gonna experience feedback. Hugging someone, you're not gonna experience feedback. That's a huge value. Improved audibility for soft speech sounds for better target match. And then more open-fittings for natural own voice sound. Nobody wants to, you know, anytime you listen to your voicemail or you listen to a recording of your voice, what is your first instinct? I don't sound like that. Because we don't hear ourselves in the same manner, like when we come, speech comes out of our mouth, it sounds different than when we actually listen to a recording of us. Same thing with plugging your ears. If you plug your ears, that would be a really hard sensation to overcome, constantly feeling occluded and plugged.

So, with our AFC Pro advantage, with our incredible RITE offering, we're able to deploy more open-fittings for that own-voice natural sound fidelity. So, when we talk about feedback cancellation or feedback management, we've identified three simple goals that we feel any feedback system should deploy. Number one, we want to decrease the occurrence or annoyance of audible feedback. And that audible feedback could be to the person sitting next to the patient. It can be to the patient themselves, do they hear it? But are others around them hearing it as well? Number two, we want to maintain speech intelligibility. As I said, we're not willing to sacrifice gain, we're not

willing to sacrifice that. And number three, successful open-fittings in sound quality. You know, when this industry first went into open-fittings, it was phenomenal because that, you used to see that ski slope loss and go, ugh, I don't wanna, I don't know how to fit that. I don't want to fit that, that's not gonna work well, 'cause they're gonna feel occluded. If I put them in a custom, they're gonna feel occluded. They don't want a BTE, ah, I'm nervous. And then our open-fittings came into play. And it was phenomenal that we are able to fit those challenging losses. But what happens when that said that ski slope loss drifts out to, you know, 85 dB at 3K? That's a rough one. And then we'd sit there and go, uhh, how are we gonna handle feedback? Well, we're gonna cut the gain because technology's just wasn't that advanced for a really intelligent feedback management system. But we did it, we absolutely did, we took care of our patients, we gave 'em the absolute best technology we could. But now I'm just blown away at what we can do with regards to open-fittings and really high fidelity sound quality. So, we're gonna talk today about what we call STM Processing. And that's Spectro-Temporal Modulation. AFC Pro is again, that Adaptive Phase Cancellation System that we have used, that we've had wild success with. But now it has this new anti-feedback system embedded, and that's the STM Processor. It is the designed to attenuate feedback from fast-changing conditions. Now, you may be wondering, what on earth is STM Processing? Because I absolutely was in that camp of how does this work? Like, what does this all mean? Well, STM modulation is an added signal that attenuates the feedback path, it just stops it right in its tracks. Applying STM prevents the feedback from occurring and it replaces the traditional, loud annoying feedback, whistling sound. I mean, like, think about the just, any hearing care professional can, kind of, close your eyes and remember, oof, feedback. That just, that really aggressive whistle sound. It replaces it with a non-intrusive STM processed sound. If you have very good hearing, very good hearing, you can sometimes hear this signal if you're doing a listening check on a hearing aid. It has been reported, it sounds kind of like a flutter, like a, do-da-do, you probably, I don't even know if you can hear me do that. But it's a very, very light, energy sound. Okay? This image that you see

here is an example of the STM pattern. It is a short, brief breaker signal that the system applies in the risk of feedback occurs in those dynamic environments. It adapts extremely fast, the changing paths.

And that briefly applied modulated signal, breaks the feedback loop and helps them suppress the feedback. Wonderful thing about this, we, the STM processing provides additional 60 dB of gain before feedback. So again, we have those more stronger hearing losses, more severe hearing losses, that aren't gonna deal with feedback. So, let me just summarize what we just talked about, and we do have a lot more coming, but conclusion one here, is that STM is applied only when the adaptive filter is insufficient to cancel the feedback. So, it's not gonna constantly engage, only when our Adaptive Feedback Canceller can't grab it on its own. It improves, conclusion two, is STM is gonna improve feedback cancellation in those challenging dynamic situations, during rapid feedback path changes without changing feedback performance in other situations. So, it's taking care of that snapshot, that moment in time. Our third conclusion is gonna use the simulation show that STM is able to keep the hearing aid system stable, to avoid feedback whistling sounds. So, this proven concept makes it ideal to implement in hearing aids to advance our progress over previous technology. So, with Enchant, when we deployed our Adaptive Feedback Canceller, our complaints of feedback went from like, I don't know, a fairly decent amount to zero. We just, you know, we weren't getting anything with regards to feedback. And as we then, you know, within chance, and we were doing more severe, more profound losses with the products, we would occasionally get a conversation, like, heh, you know, the Audiologist would let us know, like, hey, I understand the patient's outside the fitting range, they're really borderline, but they really want this model. What can we do? And you know what? We did a really good job. We absolutely did. But now with STM Processing, I have yet to find a hearing loss that I was like, yeah, I don't think we can handle that with feedback and gain. Everything I see that comes across, I am just dazzled with.

So, now we have some Spectrogram examples. And we can listen to an example of AFC alone, where you can hear audible feedback, and then we're gonna listen to it with the AFC Pro, including the STM Processing where you won't be able to hear it. If you look at this image here, the white lines in the box, that you see, those are where, like the white lines in the box with the AFC, are where feedback is happening, and the black dashes are where, are those STM sounds. Like that slight, I guess you call it, I call it a flutter. Now, this is really important to note here 'cause you're gonna see and when you listen to the example, you'll hear feedback twice in the first example, and you'll hear, like, if you can hear the flutter, great, that means you've got exceptional hearing, and you have an excellent high fidelity speaker system with your computer that you're able to ascertain this information. So, I'm just gonna get the audio pulled up here. Okay, so I'm gonna play these a few times. First, I'm going to do the AFC audio. I'll play that again. Now in this example, I want to let everyone know, we had a BTE that had a ton of gain that was attached to an ear mold, and we actually put a slice through that thin tube, because we really needed to get that feedback signal. So this was, again, not a normal listening experience, by any way, shape, or form, but we really needed something. We needed to be able to get our hearing aid students to engage in feedback. So I'll play that again. And now I'm going to engage the AFC Pro

- [Woman] Various home rule, though, is far reaching.

- [Erin] And I'll play that again.

- [Woman] Various home rule, thought, is far reaching.

- [Erin] So, think about your end users, think about your family members who you have fit with hearing aids because we all are hearing care professionals, and we have all fit our family members with hearing amplification. Would we like to have our family

members and loved ones listening to this signal? Or would we have their have them listened to this signal? I mean, like, to me, it is an astronomically eye opening experience to be able to hear speech throughout this aggressively inducing feedback cancellation system. Again, this is not a normal environment, we understand that patients aren't out there walking around with holes, or, you know, gashes in their ear mold tubing, but it's just an eye opening signal. When you take a look at this feedback cancellation system, versus this feedback cancellation system, which really, the proof is in the pudding. The silly American English phrase, but proof is absolutely there. Alrighty, so I want to talk to you about AFC Pro in the EXPRESSfit Pro fitting system, as I mentioned, that is the name of our fitting software that programs the Captivate hearing instruments. AFC Pro is located in the Feedback Manager screen within the software, so you can see in the screenshot, the left side is your different tasks and your different steps to fitting the hearing instrument. We're in the Fit Hearing Instrument tab, and you can see the Feedback Manager there is listed in the sub tab tasks there at the top. It is easy to measure, it's easy to, you just literally, click on the measure button, you want a nice quiet environment for your patient, just like you've always wanted for running the AFC Pro. We do, I do want to call out that it is on by default, it absolutely is on by default in the software, we recommend running the feedback canceller with every fitting. You know, we use KEMAR, we use a lot of calculations, we have a guesstimate of what that end users ear canal volume is like and such, but when in doubt, measure. It does not hurt the instrument by any way, shape, or form, and if anything, your headroom, and your values, and your target matching will only improve by running that Feedback Manager.

So, another thing to note, that AFC Pro is not active when there's no feedback risk. So, it's not a system that's draining and pulling your battery, and causing havoc, and just, you know, being a conundrum for you, if you will. AFC Pro will decrease the sound artifact that may occur, maximizing sound quality, and uses a feedback monitor to identify sounds previously amplified, like tonal sounds, or music. So, it's going to do

this, it's gonna manage and analyze the signal, but it's not gonna activate and engage if there's no risk of feedback. So, AFC Pro considers sound quality artifacts to also really achieve goal three that we had talked about. So, remember our three simple goals. Absolutely. Number one, check mark, we decrease the occurrence and annoyance of audible feedback. Check mark two, we absolutely maintain speech intelligibility with AFC Pro. We are not interested in sacrificing gain. We are absolutely not interested in sacrificing, especially speech sounds and speech frequencies. And finally again, that's successful open-fitted sound quality. Not impacting those tonal signals. AFC Pro is considered to be one of the most beneficial technologies offered in a SoundDNA Platform. It is available in, I'm gonna say this really slow. In all Captivate products, in all technology levels. I'm gonna repeat that, 'cause it just makes me super happy. Captivate or AFC Pro is available in all Captivate products, in all technology levels. That's dynamite, guys. That's absolutely dynamite. Because it doesn't matter what technology that your lifestyle, you know, can get you to afford, if you will, and especially in these challenging global times, this basic and this entry level technology offering an exceptional feedback cancellation system. I'm very proud of it. I'm very proud and honored and humbled to bring this product market. So, what some are my favorite things to do then? An animation. We do a great job explaining our technologies and a lot of our features in our product animation, or our technology demonstration animations. So, I'm gonna go ahead and I'm going to play The AFC Pro video that's going to give you a great walkthrough of what is happening with this technology. So, bear with me, just a moment.

- [Narrator] The Sonic SoundDNA Platform makes everyday sounds better with Adaptive Feedback Canceller Pro, also called AFC Pro. This innovative feature uses two anti-feedback technologies to create one proficient system. Let's see how they work together to reduce the risk of feedback. When an incoming sound reaches the hearing aids microphone, it gets amplified and sent through the receiver into the ear. Sometimes the microphone picks up the amplified sound after it's left the receiver.

That sound is amplified another degree and the process repeats, turning the sound into an unpleasant squeal called feedback. That repeating cycle of sound, between the receiver and microphone, is called the feedback path. Sonic's Adaptive Feedback Canceller already monitors signals to see if they've been amplified before. If so, the anti-feedback system estimates the sounds feedback path and sends a counter signal to cancel the repeated sound, this breaks the feedback path. This system works well in stable situations when it can estimate a sounds feedback path, then match it to the actual feedback path in the ear canal. However, feedback can also occur when the feedback path is more unpredictable. Quick movements near the hearing aid, like, putting on a hat or making adjustments to the device can also trigger feedback. In these cases, the system can't respond fast enough and the estimated feedback path doesn't match the real feedback path. Sounds that fall outside the predicted feedback path are picked up from the receiver and start to amplify. SoundDNA with AFC Pro now includes a second system to control feedback from rapidly changing feedback paths. This new approach is called Spectro-Temporal Modulation, or STM Processing. As sound enters the hearing aid, STM Processing detects feedback from dynamic conditions and applies momentary attenuation only in the specific frequency bands of the feedback. The STM system rapidly eliminates feedback signals from dynamic conditions, while the traditional anti-feedback system cancels feedback from static conditions. Together these two systems are called AFC Pro. Let's compare graphs with and without this technology. Here is a spectrogram of a hearing aids output without AFC Pro. The acoustical feedback is shown in red. This spectrogram shows the same hearing aids output with AFC Pro. The acoustical feedback that was in red is gone. With a new technology, nearly all audible feedback from the output has been eliminated. AFC Pro removes offending feedback signals often before they are even heard. The patient enjoys a reduced risk of feedback. AFC Pro is easy to use in the fitting software. First, place the hearing instruments in the clients ears correctly, and ensure background noise is not present. Click measure to run the measurements, then choose accept to apply the measured feedback margins. Listeners will appreciate the

advantages of this two-in-one system. AFC Pro means fewer distractions from the annoyance of feedback, whether in stable or changing conditions. Soft speech sounds are more audible for a better target match. And because it reduces feedback that can come from motion near the hearing instrument, AFC Pro delivers more open-fit possibilities. Listeners can hear the sound of their own voice in a more clear and natural way. With the advanced feedback management system of AFC Pro, patients enjoy a truly individual hearing experience. The SoundDNA Platform is one more way Sonic technology makes everyday sounds better.

- [Erin] Helps when I unmute my microphone as I start talking. So, absolutely, as you can see that Adaptive Feedback Canceller Pro meets our three simple goals for feedback management and delivers exceptional sound quality. Now, let's move on to Frequency Transfer, everyone. You can see, this is available on the screen in the 100, 80, 60, and 40. Please note the Frequency Transfer is not available in the Captivate 20 product offering. Frequency Transfer copies and transfers high frequency input to a lower frequency region by sending this input to a region with better residual hearing, Frequency Transfer helps patients hear more speech cues for a better consonant identification. This is accessible via the Frequency Transfer control in the EXPRESSfit Pro fitting system. Now, we have 10 different destination regions. A destination region is gonna be adjusting the source and the destination region. Okay, the high frequency and low frequency regions. We offer seven different intensity settings. In here we're talking about adjusting the strength of the high frequency source sound when mixed with a low frequency destination sound. And finally, we offer high frequency attenuation. This can turn the gain in high frequency bands above the destination, on or off. Again, you as the expert in knowing your patient better than anyone, these are tools that are completely accessible to you in the EXPRESSfit Pro fitting system. Now, let's talk about EDR, Extended Dynamic Range. This you can see here is available in the Captivate 100. It is absolutely a premium level feature. It is specifically designed to help signals with high intensity, to really keep loud sounds clear in those challenging

listening environments. A lot of times what happens is those loud speech signals can be distorted and sound muddled, if you will, for hearing instrument wearers. But with EDR, it absolutely does not. It's gonna adaptively extend the dynamic range input, okay, and it will expand to the growing sound level only as needed. So, it's not like it's gonna do this constantly, it only engages when necessary. The upper limit will depend on the input level of the speech signal and it'll be anywhere from 95 dB SPLs to 113 dB SPL. This allows loud peaks to be amplified with less risk of distortion, and it's really for everyday sounds. Again, calling out, it is only available in the Captivate 100 product offering. SmartMusic. Music is a really important tonal signal, if you will, I mean, if you can even call it a tonal signal. To me, music is really important. It absolutely connects people. How often do you hear someone humming a tune or seeing, you just start, you know, that ear worm gets with you and it connects others. Music is a way that we connect with our communities, it's in the way that we connect with our family members, and we connect, in today's world, we connect online with music. This offering of SmartMusic is available in the Captivate 100, Captivate 80, and Captivate 60. So, greater music enjoyment for those live experiences, enthusiasts and musicians alike, they deserve to enjoy clear sounding music again. And for ages and ages that wasn't necessarily the case. Right? For a long time, we haven't had the flexibility of really hearing music in a high fidelity manner. And that has been a consistent complaint from a lot of hearing aid wearers across the globe until we deployed our Captivate product technology. So, there are really four components to SmartMusic. You know, it embraces the power of music as it was intended, it anticipates the emotion, the swell of live music, and extends the dynamic range of a sound to a fixed level of 113 dB SPL.

The, it deploys, like in the back end of things, if you will. We deploy Speech Variable Processing in our SmartMusic program to maintain that balance between the harmonics. We deploy a wideband frequency response, and that's really important for perceived naturalness of music. So, a lot of traditional systems out there that are using

a channel based architecture are going to take things and put into pieces, take an average of an average, and kind of, try to sum it all up. Well, unfortunately, what you lose there is that natural component of the signal. So, by us being able to take a look at that wideband frequency response, that really is key to being successful for a natural sound quality. Our controls here, you have a fixed Hypercardioid polar pattern, the position of a null doesn't change, it eliminates noises from behind, and so we can concentrate what's on stage, what's in front of us. Historically, we know as humans, we face what we want to hear. If there is a concert and I'm attending a concert, I'm looking at the performers, that's who I want to hear. Now, there could be a loved one sitting next to me that I might look to them if they have something to tell me during the concert. But again, this is really what's focusing this component, the four components with regards to SmartMusic. So, that sums up our sound that's natural. Our first S of our four S's. We got three more to go and plenty of time to accomplish that. I would like to now dig into Speech Understanding in Noise. Interesting thing here, I believe very strongly that 100% of our hearing aid wearers out there struggle in noise. I think there are a lot of features and a lot of benefits in a hearing aid that are wonderful things that we deploy to make life more comfortable, to make life, you know, to make things sound more natural, to make things more simplistic, but sound, or Speech Understanding in Noise, rather, 100% of everyone out there struggles with speech-in-noise. And this being part of our 4S Foundation, again, where our laser focus is, this is absolutely important to our brand, to our product. But what we deliver, at the end of the day, you know, I'm a hearing care professional. I want to be able to deliver something that makes sense, that provides value to our end users. And the technologies that we're gonna share today with regards to SPiN Management, Binaural Noise Management, Impulse Noise Reduction, Soft Noise Reduction, Wind Noise Reduction, Tinnitus SoundSupport, all of these features allow us to hear conversations more clearly in noise. And Sonic delivers what life sounds like, here with these solutions. So, with SPiN Management we have really three different technologies in

the, or three technologies in the Captivate 100, 80, and 60, and we deploy two of the technologies in our Captivate 40 and 20 that we'll share with you today.

So, historically, what's the best thing we can do for our patients? We need to improve the signal-to-noise ratio, the SNR. Hearing impaired people need a significantly greater signal-to-noise ratio advantage over persons with normal hearing, in order to understand an equal amount of speech. We know this. But how great are our technologies at executing it? That's the question. Well, historically, what have we done? How do we handle this? Well, we deploy a lot of different things. I remember with digital or directional microphones. There's probably a few people out there that can recall when D-Mics hit the market. And it was this eye-opening experience, like, wait, two microphones? And how and wow, I mean, the technology was, it was really fantastic. It was a big leap, a big step in the right direction. And then we have Digital Noise Reduction. These are systems that we've done historically, and have been incredibly successful. But let's talk about today, it's 2020, and I'd like to share with you today about SPiN Management. Now, SPiN again, we love acronyms here, SPiN is Speech-in-Noise Management that includes up to three different technologies. We have SPiN Directionality, SPiN Noise Reduction, and SPiN Engage. I do want to call out that SPiN Engage is only available in the Captivate 100, 80, and 60. Not available in the 40 and 20. It offers a completely new automatic adaptive and multiband design and it's really designed to enhance speech, reduce noise, and optimize the control of all of it. Truly assist in engaged functioning with a lot of systems all together in one. So, we have courses specifically on Audiology Online, with regards to SPiN Management. I encourage you to go ahead and take a listen to those courses. I am doing a brief snapshot of several of these technologies 'cause there's so many wonderful things with Captivate that we want to share. We want to make sure we get through all of them. But SPiN Management, again, has those three different buckets, if you will. SPiN Directionality is gonna use null steering to select the microphones polar patterns that's gonna give you the most optimal Signal Noise Ratio in 16 independent frequency

bands. Now SPiN Noise Reduction is designed to reduce the gain in the noise compared to speech, operating in the same 16 independent frequency bands. Now SPiN Engage, what SPiN Engage is gonna do is it's gonna inform the directionality and noise reduction systems, how soon to activate. It is again, a premium setting, it is not available in the Captivate 40 and 20. Now, the SPiN Engage setting is going to determine at which signal-to-noise ratio, SPiN Directionality and SPiN Noise Reduction adjust to the environment. So, you know, previously we had our Directionality system and it was doing a great job in four different regions. And then we had our Noise Reduction that was handling and, you know, and taking care of things independently as well. But now with SPiN Engage we are working both systems within the same multiband design, and they are coordinated at the onset of Directionality and Noise Reduction as the SNR fluctuates in these 16 independent frequency bands. So, what happens as more noise or less noise, everything is going to engage, whether the polarity needs to change, what happens with the Noise Reduction? Do we engage, do we disengage? What is going on? And hearing aid users have varying tolerances, limits regarding how much noise they're willing to accept. We've seen more in our newer users, they don't like any noise. Or you know, our new hearing wearers, they're very often pretty sensitive to the amount of noise that they're willing to accept.

Whereas your traditional hearing aid wearers, they're like, give me the noise because that, you know, I know that the world is on, quote-unquote, by hearing the noise. So, the great thing is, in EXPRESSfit Pro, you have the ability to set the settings how absolutely personalized your individual patient needs. Very high and high are really best for patients that are most bothered by noise. Whereas medium and low are really ideal for those patients who can better tolerate noise or better want noise. So again, knowing you are the expert, no one knows your patient better than you, you have that flexibility to be creative in the software. So, the SPiN Management advantage, you know, better speech understanding in noisy listening environments, it absolutely executes. Settings that start at a higher signal-to-noise ratio levels to reduce

background noise. We have personalized to meet patients' preferences. Guess what, we have a great paper, guys. Check out, as I mentioned, we've got an Audiology Online course. We also have a great Spotlight paper written by my colleague, Tara Helbling. It is phenomenal on SPiN Management. So go ahead, it's a great read, and you will be able to walk away with a very solid understanding of what SPiN is doing from Directionality, to Noise Reduction, to the Engage. All right, Binaural Noise Management, this is a feature that is available in the Captivate 100 and Captivate 80. So again, our premium and advanced level technology offering. Now, no one likes distractions. Nobody likes distractions, and really this is gonna support your patients who encounter those environments that are distracting. You know, even noise from one side to the other, what's happening, these two ears really, genuinely working together. As I mentioned, again, it is available in Captivate 100 and Captivate 80. So, imagine a scenario. Number one, it's a summer day. I'm looking forward to summer. It's spring here in Minnesota and it's still kind of gloomy and, you know, we're just, we're ready for summer. We're ready for summer, and sunshine, and nice warm days. So, imagine this scenario. A summer day, driving in your car with the window down. And by the way, you're wearing hearing aid. So, you're having a conversation with a friend, the radio is on, and now you've got wind coming in on your left side. Yep, that's a pretty awfully, tricky, hard situation. In environments with uneven noise, we naturally focus our attention on the better side and actively mentally suppress the noise on the opposite side. This is what we know the brain is doing.

We do this to take better advantage of the better audibility in the one ear. But what if you have a system that is so smart that it's gonna activate when noise levels become significantly different between the two ears? We're gonna shift the hearing aid response into a mode that fully activates the Noise Reduction system on the side with that excessive noise. Remember that wind, I'm driving, the wind's coming into my left side? The hearing instrument is automatically going to set me up for success. It will reduce the gain, fully activate the Noise Reduction system on that opposite side. That's

a pretty cool system. And this is doing it automatically. I don't have to think about it, there's nothing I need to do, there's nothing I need to adjust. It's doing it automatically. Again, this is the premium and advanced level feature only allowed, or no not allowed, only available, rather, in the 100 and the 80. But this to me, is an absolute value add for the Captivate product offering. Now, let's talk about further relief from distractions. Remember, I said nobody likes distractions? Well, we want to make sure we're offering all the tools we can from a product offering that really make a difference for our end users. Remember? Speech Understanding in Noise, that's paramount and important into what we do with our products. All the features we're gonna talk about right now, they are available in the Captivate 100, 80, 60, 40 and 20. This slide always makes me smile because nobody wants noise. It's an accurate statement. Nobody wants noise. You think about it. Noise impacts our world, it also tells us the world going on around us, but noise can be overwhelming. And we need to make sure our hearing instruments offer solutions to give our patients the best success in those noisy environments. Now, Impulse Noise Reduction is not available in the Captivate 20. So, it's available in the Captivate 100, 80, 60, and 40 level offering. And it's going to lessen the discomfort of sudden loud sounds. So, think about dishes clanking, even turning the water on at your bathroom sink. Those are really, like, it's an aggressive sudden loud sound. Keys jingling, slamming a car door, those are all very impulsive sounds and products that deploy Impulse Noise Reduction really help, again, with that comfort. And it doesn't attack the speech signal, it's really only focusing on that impulsive sound. Soft Noise Reduction. You know, some people in Sonic history, or even just some people out there from a competitive perspective, you know, another word for Soft Noise Reduction is expansion. And we're gonna reduce the low level noises without affecting speech. I should actually make a slide, I should have that blinking, without affecting speech. There's a lot of competitive systems out there that claim to deploy expansion or claim to offer the Soft Noise Reduction, but when you take a look at actually what's running on the instrument, it's decreasing the gain in your speech signals. That's a problem, in your speech frequencies, that's a problem. Our system doesn't do that. We

want to keep those low level signals at bay. So things like your HVAC System, you know, those types of signals, we want to keep 'em away, not bother us, leave us alone. Wind Noise Reduction. Listening to a hearing instrument in a windy environment, that is a challenge, it is absolutely a challenge. And we want to make sure we're able to provide exceptional sound quality by adjusting to outside, or for adjusting to outside activities, monitoring the environment, preventing that rushing sound of wind from being amplified. People do great, absolutely great, with our products. They're able to be on a golf course, walk along the beach, really handle life incredibly well. Let's talk about Tinnitus SoundSupport. This is another thing that I get excited about.

You can see Captivate 100, 80, 60, 40, and 20. Patients with severe to profound hearing loss may encounter an additional auditory challenge when it comes to ringing in the ears. With Captivate you can enhance your practice with innovative technology that supports your patients that struggle with tinnitus. It is available in all models, in all technology levels, and as someone who has tinnitus, I think this is exceptional. So, the Tinnitus SoundSupport that we deploy, offers the following tinnitus relief sound options. We have four different broadband sounds and three nature-like sounds. You know, we, Tinnitus SoundSupport aims to reduce your patients' perception of tinnitus by providing amplification and generating a sound relief option at the same time. It's available up to four, available in up to four listening programs. This feature can either be activated or deactivated for patients who need it. More impressively, it can be customized with sounds that vary in level and frequency content per program. Now, you may wonder how do you control it? Well again, you activate it in the EXPRESSfit Pro fitting system, but control the Tinnitus SoundSupport is done via our app. You can adjust the tinnitus volume or mute, you can modify the tinnitus sound by changing its modulation rate or frequency response. Right there is a huge value add for those patients who struggle with tinnitus. To discover more information on this particular topic, 'cause I could talk to you for ages about Tinnitus SoundSupport, please go ahead and read our Sonic Spotlight Technology paper on Tinnitus SoundSupport. It

can be found at www.Sonici.com. It is an excellent, excellent resource. Alrighty. So, we've gone through two S's here folks. We've done Sound That is Natural in Speech, understanding annoyance. Simplicity in all we do. Now, in today's world, not everything is simple. And we strive to be the company that is easy to do business with, we want to be this, we want to be viewed as that simple provider, right? We want to provide you things that make a difference in your world that can then make a difference into our patients world. And with Captivate, we absolutely deliver solutions that make sense. We offer lithium-ion rechargeability, dual-radio system, If This Then That, IFTTT with the Internet of Things.

We have deployed low frequency enhancement, Binaural Coordination and Synchronization, and our EXPRESSfit Pro fitting system that still catches massively high regards from hearing care professionals across the globe for its simplistic ease of use. If you've never picked up a Sonic fitting, or a Sonic hearing instrument before, a patient walks in, and you're like, sure I've got the software, I can help you, and you're not sure where to go? I feel very confident you'll be able to get into the software, recognize the tools that are essential that you need to be able to take care of that patient, and take care and execute exactly what they need. So, let's dig into rechargeability because, let me tell, you holy buckets, this is quite a hot topic. Lithium-ion rechargeable battery solution is available in, drumroll please, Captivate 40 and 20. It already is in the marketplace in the 100, 80, and 60. But hot dog, I get to offer this to you today in the 40 and 20. This is important guys. I mean, think about it. It doesn't, you know, if everyone is in various walks of life from a fiscal perspective and our global world right now is dealing with a lot of things happening. We need to be budget conscious, we need to be very aware of everyone's, you know, situations that we're all dealing with. And to be able to offer an incredible sound quality and a rechargeable solution at a 20 or even a 40 level technology. I'm so pleased to be able to share this with you today. It is a robust battery life capacity for a full day's use following a very short charging time. Alrighty. The Captivate Lithium-ion Solution. Now,

here you can see we have a dedicated model, it is called the miniRITE T R, T is for telecoil, R is for rechargeability. It is available in all Captivate levels, the 100, 80, 60, and brand new to market, 40, and the 20. You can see the image here, the instruments are placed in the charger which is black. You can also see in the image here, there is a little green LED light that tells me that those instruments are fully charged, and for a full charge, it would be a three, being seated in our charger for three hours. Great thing is, is for only 30 minutes charging, you're still gonna get 25% battery life. One hour will give you 50%. So, this is an incredibly fluid effective system. Now, again, this is available in the Captivate miniRITE T R. It does not compromise rechargeability for size. I mean, yes, on the screen right now this looks like a gigantic hearing instrument, but it's really not, it's actually quite small. When you take a look, it actually, all the components inside from the rechargeable battery to the chip itself, the microphones, the amplifiers, the whole nine yards, there's so many things really wedged, tightly packed, in this hearing instrument. It is small, it is stylish, and it's very modern. Suitable for mild to profound hearing losses. It does include that telecoil. And you can see here, it's that double push button for volume control, for muting, as well as program change. I would like to talk about that T-coil, you know, T-coils are not new technology. They're just not. But let me tell ya, they're pretty great. When you take a look at the technology available, and what a telecoil can do, and when you have places of worship, you have theaters, you have restaurants, more and more places, globally, are becoming looped.

And as a hearing care professional, I love it. I absolutely love it because it gives people another opportunity for success. And it is awesome. It really is. So, devices that include telecoil definitely get a thumbs up from me. So, taking a look at the chargers, a quick overview. It is what we call, inductive technology, that allows for contactless charging of the hearing instrument via an induction coil. So, what that tells you is, you're not gonna have moisture problems. Okay, because the inductive technology, you don't have those battery contacts that are causing problems on the outside of the case. It also deploys this magnetic connection in the charger, so hearing instruments

can't fall out. So, if I were to take that charger with the hearing instrument and absolutely flip it upside down, hold it upside down, those instruments are going to stay fully charged. Meaning, they're not gonna fall out of the charger, they're gonna stay right in place until you physically pull them out. When the hearing instruments are inserted into the charger, it automatically starts charging. So, you don't have to put them in the charger and then press a button to start charging, or do something more, it's just literally place and go. And finally, the hearing instruments turn on when they are removed from the charger. So, again, when you pull, I shouldn't say pull, 'cause you don't like, yank it out. When you lift the hearing instrument out, very easily, the hearing instrument will play, what we call, like a startup tone and it's like a little jingle. Sometimes people hear it by the time they get the hearing instrument in the ear, sometimes they don't. But when you, it's great that it's not, one more thing that the patient has to do, they don't have to turn the device on, make any adjustment, they can just lift out of the charger and place right into the ear. So, from my perspective, I love the charger. I think it's pretty darn great. Now, let's talk about Dual-Radio. Again, this is available for the 100, 80, 60, 40 and 20 level offering. The world of wireless that we live in, Captivate keeps up with the ways patients interact in their world by letting them control a variety of wireless options via maybe the program button at the ear level, their smartphone via the app, or other accessories from Sonic. We live in a world that is wirelessly connected. And with our Dual-Radio systems, we have systems integrated into one hearing aid. Like, two different systems. Now, I'm not sure why this, typically there's an image. Let me see if I can go forward. Ah, there it is. There's my phone. We have two different systems. We have the NFMI, which is a Near Field Magnetic and our 2.4, which is our direct-to-hearing aid. Okay, the smart system deploying this 2.4 gigahertz technology is so effective because patients can stream audio directly to their Captivate via their iPhone. Or if you're using an Android there is another wireless solution in Play.

The really smart thing though, here, is how we deploy NFMI providing this ear-to-ear communication, really optimizes battery life compared to other 2.4 gigahertz systems in the marketplace and in the competitive landscape. With using Near Field Magnetic it really makes the system very positive with regards to battery life. All right, SoundLink 2, here's our new app. A nice new screen that you will see here, is compatible with the iPhone and Android, and we do list on our website, a compatibility guide. So, make sure you go check that out. But it can control wireless operations, volume, program change, you can see you have IFTTT here, there's settings. We also have a convenience of Find My Hearing Aid. So, if someone loses, the last time it was connected, it'll place that hearing instrument in that location. You also deploy advanced Tinnitus SoundSupport control, battery life percentage, there's a whole lot for you to tackle there. When we take a look at our SoundDNA conductivity portfolio, we have a lot. We absolutely have a lot of things happening. And I just kinda want to run through everything real quickly. Our Dual-Radio system and the connectivity portfolio are available with all Captivate technology levels. So, 100, 80, 60, 40, 20, as well as all of our models, our miniRITE, miniRITE T, miniRITE T R, our rechargeable telecoil, and our BTE105. So, the SoundLink 2 app is for iPhone and Android, it has a fresh new design. We have a course dedicated just to that with our great partner, Audiology Online. Our TV-A adapter, now this is gonna play TV audio directly to the hearing aids without an intermediary transmitter. So, patients can enjoy high quality digital stereo sound from their favorite shows, movies, entertainment. It connects to most TVs and the at home pairing is absolutely simple and fast. We do have a video of pairing on our website available, as well. Note, I do want to call out the Phone Adapter 2 is for landline phones. Landline phones, meaning old school phone company phones. Not a VoIP connection. It does require the SoundClip-A since it doesn't have BLE wireless, but it is for people that have that phone configuration, it is excellent. Moving next into our RC-A Remote Control, the RC-A is quite small enough to fit in a pocket or purse, it lets the patient adjust volumes, switch programs, control connectivity sources like the TV-A Adapter. Now, this is really for someone, it could be for a caregiver, it

could be for someone who does not want to use the app, but it is definitely a tool available in the arsenal of the Sonic offering. Wireless Fittings are all possible with Captivate devices. You can see there, there's the Noahlink Wireless and Captivate can program all of our instruments via the Noahlink Wireless. SoundClip-A, I love this thing. This allows patients to stream sound and stereo to Captivate from any Bluetooth 2.1 smartphone or device, including iPhones and Androids. Now again, it's direct-to-Android, so you don't need to use a SoundClip, I'm sorry, it's direct-to-iPhone. You don't need to use the SoundClip-A for streaming from an iPhone. But absolutely, when you're on an Android, you do need to use the SoundClip-A. It also functions, this is where it gets cool for me, it also functions as a remote microphone to give to another speaker for clearer conversations. And even as a remote control that changes programs, adjusts volume and noise, and it really is kind of endless.

Now, I just had the pleasure of working with someone who was out, there was a gathering, they do a trivia night, okay? And this particular person is sitting at a table with like, 15 to 20 people. And then there's restaurant noise, and then there's a speaker who is presenting these trivia questions. And he communicated to me, he's like, I love my hearing aids, but I'm having a hard time with all the restaurant ambient noise. Which of course is like the worst place ever 'cause it has really tall ceilings, and there's a lot of metal, and the floor, and it's just, it's dishes clanking, it's really hard. He's like, I'm doing really well, you know, people around me, but I can't hear the speaker who's announcing the trivia. And I'm like, ha-ha, let's talk about that SoundClip-A. And I was able to be there with him when he tried it, and he just, I couldn't. I couldn't have removed the smile from his face because it was just such an amazing sound quality for him. He's like, I was able to get the question and knew the answer before the rest of the group did. So, he was just overjoyed. And that was a really powerful moment for me to recognize the value of that SoundClip-A. And finally, please note, the internet connection with the If This Then That does require the

SoundLink 2 app. So, you can see here, we have quite the robust feedback, I'm sorry, the connectivity portfolio. Updates to SoundLink 2, you can see, here's our new refreshed design. We do deploy support for the Captivate 40 and 20. You'll see a new user interface. We call it the UI Coloring Controls. We do also offer the demo mode which we understand is very important for your practice. Thing to note here, with the Lithium-ion batteries, you will see a one percentage resolution. So, you may see that the battery is at 83%. Okay, and you may see 84%, they're in one level increments. Okay, if you're using a zinc air battery, so maybe you're using our miniRITE T miniRITE or BTE, you will see that in a 10% grading or scale, if you will. So, that would show at 90%, 80%, 70%, and so on. So, it's one thing to note the difference between a Lithium-ion and zinc air solution. All right, If This Then That, and this is, guess what? All the Captivates, 100, 80, 60, 40, and 20. So, let's make the most out of Smart Technology. We are in a smart world, folks, and the Internet of Things really makes a difference for Captivate. There are currently more than 559 internet connective devices and services available. If you haven't had time to go ahead and check out IFTTT, I absolutely encourage you to explore it. You may wonder, how is Captivate connected with IFTTT? You know, Captivate can connect to smart devices on the Internet of Things through the SoundLink 2 app and IFTTT. And that is the If This Then That service. At Sonic, we are on the GO network. But by doing so, Captivate is able to synchronize events. So, if you think about, like, turning on your internet connective lights when you turn on the hearing aids in the morning. So, you could lift your miniRITE T R's out of their charger, which turns them on, and we can trigger that to turn on your lights maybe in your bathroom. Or even a text message alert can be sent, if the hearing aid battery is low, maybe to a caregiver. The possibilities is very much genuinely are endless.

As I mentioned in the last slide, please if you haven't explored the Internet of Things, and the IFTTT community, or possibilities out there, take a moment, go to www.IFTTT.com/GO. Take a look at what is at your fingertips. It is mind boggling. So,

GO, as I mentioned, is the service that Captivate works with, okay. It's really the link between Captivate and other services on IFTTT. And this is developed by our R&D team here with our organization. So, spend some time, take a few moments, and you will be dazzled by what you can learn. Now let's dig into Low Frequency Enhancement. This is also available in the Captivate 100, 80, 60, 40, and 20. We're talking about deep bass dynamics. And really, this is a boost in low frequencies when streaming to really get a high fidelity signal. And this is something that has really made a difference for a lot folks. It is available, again, in all the models, and intention is given to really give that boost when you're streaming audio. It's especially welcome with open-fittings, as typically, with an open-fitting, you lose, 'cause there's low frequency leak, if you will, out of that dome, and it gives the effect of turning up the bass. So, if you're in your car, you're working with your frequency modulation, if you will, in your car stereo, you know, sometimes you crank up that bass and you really get that full feeling. You can access it in the Accessory Tuning Screen in the EXPRESSfit Pro fitting system, as you can see here in the screenshot. It is available in low, medium, and high, and available for direct audio streaming only. So, that would be with our TV adapter, our smartphone, our SoundClip-A. So, really is a nice value add to get when we're talking about fidelity of that signal. And absolutely is, you know, goes into the bucket of simplicity. Two ears working as one, from all the way up from our Captivate or all the way across the board for Captivate, 100 to our 20. You know, we really talk about two different things in the world of Binaural. We have Binaural Coordination and Binaural Synchronization. And coordination is having two ears working together, talking to each other, as one unit, the cochlear amplifier model, if you will. This gives a natural listening experience and lets people forget that they're even wearing hearing instruments. 'Cause they don't need to do multiple adjustments. They don't need to do this, that, and the other thing, 'cause the hearing aids, again, are working together. Binaural Synchronization, for people that prefer ear level adjustments. You know, when I make an adjustment to my right ear, it'll also make it to my left ear. EXPRESSfit Pro. This is our fitting software that is intuitive and easy to use. There are several fitting rationales

available, including DSL5, NALNL1, NALNL2, and our proprietary algorithms, best fit fast, and best fit fast as E. And EXPRESSfit Pro, my gracious, it delivers again. Here's where you'll find the selection screen for the Captivate product line, including the new 40 and 20 technology levels.

It is incredibly easy to use. You can see our left side are your different steps to fitting the instrument. As you go in and out of those screens, different tabs will appear to make sure you have all the tools necessary to be successful for your fittings. It is absolutely stunningly simple. We have a lot of different tools in the software, such as the Adaptation Manager, Transfer Fitting, Real Ear Fit, SoundStudio, Noahlink Wireless capability. Guess what, really surprising, we have a course all about EXPRESSfit Pro fitting system with our newest release, which is our 20.1. So, go ahead, take a listen to that course where we go into all of these details of nauseum. Style that stands out. Captivate, it is incredibly distinctive. So, flexibility and focus. We have four models, the miniRITE, miniRITE T, miniRITE T R, BTE105. We have five performance levels, Captivate 100, 80, 60, 40, 20. And we have seven color options available. You have your beige, taupe, brown, gray, dark gray, and black. Now, the gold is what we call our hero color, that is only available in the Captivate 100 miniRITE. And absolutely, design is in the details of Captivate. Not every feature that's listed here is on all the different models, but I'd like to just kind of highlight a couple things here. Our dual covered microphones, they are incredibly sophisticated to keep debris and moisture from entering the device. You know, we have an IP68 rating, which offers, really, you know, protection against dust and continuous immersion in three feet of water or more. Our hearing instruments, the cases themselves have what we call hydrophobic coating impregnated into the plastic, literally the fear of water. Because of this is where we're able to get that IP68 rating. We have wireless connectivity, rechargeability, in this example. we have di-FM available for our BTE105. So, there's a lot of features and it really is in all the details of Captivate. Taking a look at the model overview here, all the different models we've discussed today. I would like to highlight that there are power

receivers available in for our RITE product and that would be the 105, the power model, or the power receiver, if you will, is embedded in an ear mold, and it's a great offering availability for your patient, as needed. Volume control, telecoil, you have your different receiver sizes, your 60, 85, 100, and 105, those numbers indicate the thresholds, like if you're taking a look at an audiogram dBHL, you know, if you've got thresholds around 60-70, 70, 70-80, I would say let's go with that 85 receiver. Okay, you can think of that as a number correlation when you're taking a look at that audiogram. All the devices have an IP68 rating. Again, the BTE105 is convertible from a thin tube or an ear hook configuration. And we do deploy IFTTT across the board. Taking a look here at all the different feature overview. This is a really brief glimpse of the full Captivate feature overview table that's available in our quick reference guide, as well as on our website. I would encourage you go ahead, take a look at our website to view the entire table in its entirety. I absolutely couldn't fit on the screen here, the font would be so tiny, you wouldn't be able to recognize anything. All we did was take a quick little snapshot here, so you can see all five technology levels of Captivate. So, when you take a look at Sonic's Captivate, we've discussed sound that is natural, we've discussed speech understanding in noise, we've discussed simplicity in everything you do, or everything we do, and we've discussed style that stands out. It completely is shown and evidenced in our Captivate product offering. So thank you.

Thank you so much for joining me on this really long course, as I barreled through all the technologies that Captivate is able to deliver. If you have any questions, know that I am available, as well as my team, to answer and help you work with any solution necessary that you need. Really cool thing, now there's simplicity with our company, you have one phone number to reach anyone in the organization. I love that. It is 888-423-7834, our website is www.Sonici.com. For those of you who use our portal, that access is www.MySonici.com. And an important email address that you should all have embedded in your memories here. It is support@Sonici.com, S-U-P-P-O-R-T@Sonici.com. Any question can come through email, whether regarding

the technology, regarding product offerings, if you have any question on Enchant, a question on anything on Trek, our Super Power or Ultra Power, we are happy, and more than happy to help you with any inquiry you have. You are also, obviously, more than welcome to contact us with that phone number should you want to speak to me directly, just ask for Erin, I am the only Erin in the group. Captivate, it's truly what life sounds like. Thank you, thank you, thank you, thank you for joining me today. I look forward to experiencing Captivate with you, as you take a look at this for your product offering. Have a wonderful day, everyone, take care.