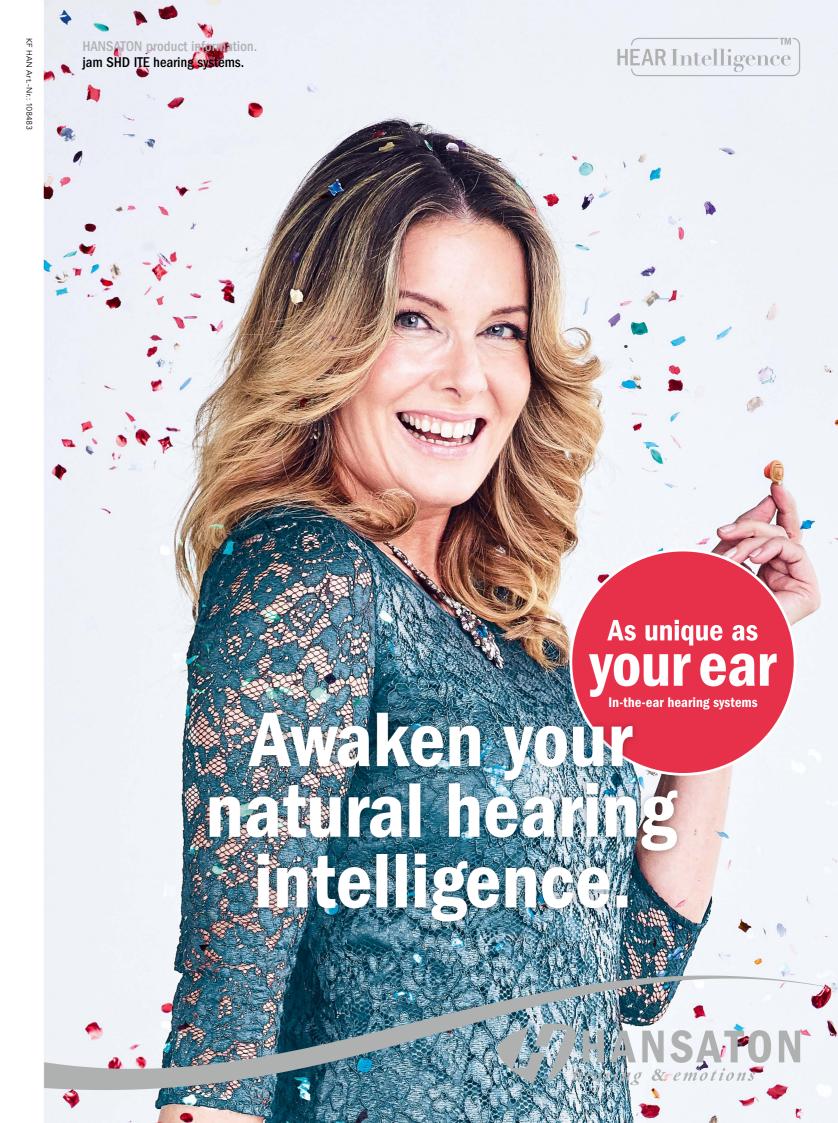




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## **60** years of Hanseatic tradition. We combine high-tech with personality.

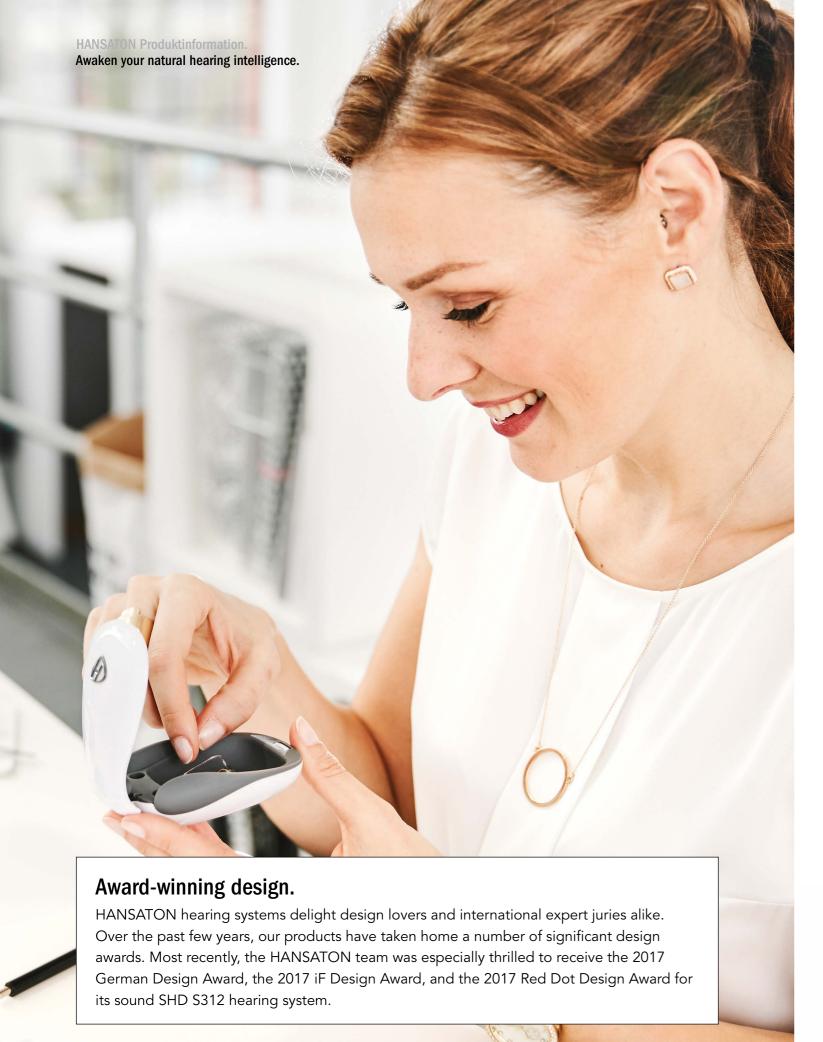
When my father, Uwe Fischer, joined my grandfather's acoustics company, he had one vision more than anything: to help hearing-impaired people enjoy better quality of life. For that reason, he established the company's own research and development department, laying the foundations for high quality, HANSATON-made hearing systems. Together with our dedicated employees, I am continuing this tradition responsibly into the third generation.

This year, we are celebrating 60 Years of HANSATON. We're very proud of that achievement – it shows that we've taken our company down the right path over the course of our long and successful history. As a traditional Hanseatic company, we stand for innovative technologies and award-winning design. We work together with audiologists and other partners to develop tailor-made solutions that will help people achieve optimum hearing experiences. Every day. Around the world.

All the best from Hamburg,

Johannes Fischer

Johannes Fischer



## Awaken your natural hearing intelligence. Only intelligent hearing means natural hearing.

When hearing, the ears and the brain simultaneously undergo various complex, intelligent processes: For example, they detect acoustic signals, determine the signals' spatial locations, and evaluate their importance. At HANSATON, we speak of natural hearing intelligence. This refers to the complex interplay of different functions that are so individually and perfectly coordinated that they happen completely unconsciously. But if the ears no longer function properly, then the brain cannot perform its tasks any longer either. That is why we here at HANSATON demand the exact same requirements from a hearing system that a healthy ear would require.

HearIntelligence<sup>™</sup> hearing systems from HANSATON have been developed with the aim of taking over the impaired, natural processes of hearing through innovative signal processing. The goal is not only to compensate for the hearing loss, but also to allow for a more natural hearing.









## Hearing and understanding. How do we actually hear?

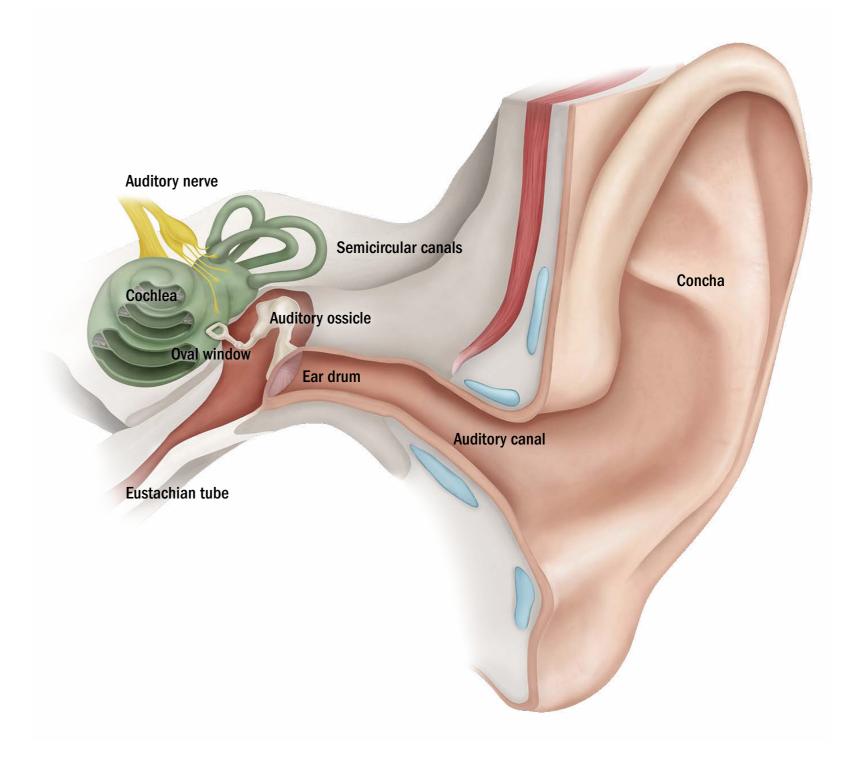
Sound is a movement of air guided through the concha to the auditory canal. At the end of the auditory canal, the sound collides with the eardrum and makes it vibrate. The sound is then conveyed to the inner ear via the chain of auditory ossicles. Hair cells convert the movement there into electrical impulses, which are transmitted to the brain via the auditory nerve.

### The brain processes what the ear picks up.

Where does a sound come from, how loud is it, is it a word, and, if yes, what does it mean? By the time we grow up, we are already listening from experience. We »block out« noise that we have learned are not important, such as continual background noises. But emotional significance also plays a role. The gentle sobbing of a baby will wake mothers from the deepest sleep although other, louder noises may not disturb them.

Our speech comprehension depends on the extent to which we learn a language. After all, auditory comprehension is not the job of the ear, but rather of the brain.

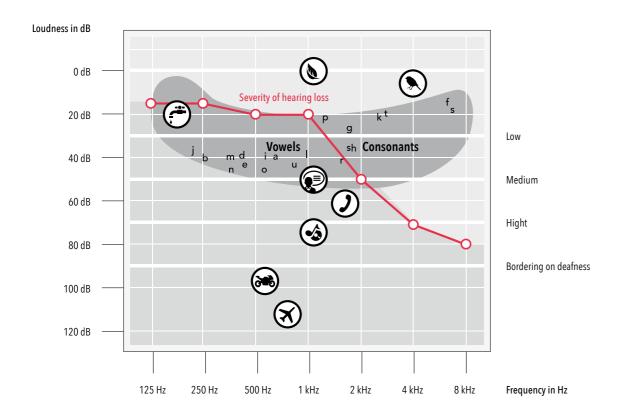
Everything that the brain does, it needs to practice.



## Information.

The ear is composed of the outer ear and the middle ear, all of which pick up, bundle, and transmit sounds. The anterior cartilaginous section of the auditory canal contains glands, which produce cerumen (ear wax), and cilia which transport the wax to the outside. You could say that the ear cleans itself. The inner ear is home to the semicircular canals (our organ of balance) and the cochlea. The cochlea contains approximately 12,000 outer and 3,000 inner hair nerve cells, which are responsible for converting the sound into neural impulses. The outer hair nerve cells allow fine differentiation of pitch and volume.

### Hearing profile with main speech range.



## Recognize hearing loss. Relaxed hearing improves quality of life.

Others are usually the first to realize that someone can't hear like they used to. Family members and friends notice that you have to ask people to repeat themselves more often, speak unusually loud on the telephone, or have the television so loud that the whole neighborhood can hear it.

You can feel exhausted quickly and try to avoid situations which are uncomfortable for you, for example conversations involving larger groups of people or lots of background noise. Reduced hearing can have a range of different effects on your life, predominantly on the contact you have with those around you. Speech becomes blurred and many words are not understood correctly.

### Now is the right time to do something about it.

The severity of the hearing difficulty can be represented in an individual tone audiogram. This is done by measuring the hearing threshold for different frequencies. In other words, it is the lowest volume at which you can hear a tone. The severity of hearing reduction can then be determined depending on how low this hearing threshold is. People often do not hear all frequencies equally well or equally badly: Hearing loss is frequency-dependent. This also explains why you often don't even notice the first signs of hearing loss yourself.

Hearing reduction creeps up on you slowly. Your brain gets used to not hearing certain sounds. These tired zones first need to be retrained. Wearing a hearing system helps you step by step to start perceiving sounds again that you had forgotten ages ago. Then you can easily understand the person you are speaking with again. Don't allow your hearing to get tired. The earlier you decide to start using a hearing system, the easier it will be to return to hearing everything again. There is no reason to let another day go by with an imperfect hearing experience.

## Natural hearing intelligence. Natural hearing means everyday well-being.

Hearing is the most powerful of all our senses. Every hour of every day, it enables us to identify up to 400,000 sounds and even pinpoint the direction those sounds are coming from. That's important because our ears provide us with crucial, even life-saving information about our surroundings.

HANSATON has identified five aural functions that are essential to a natural hearing experience: detection, automation, focusing, localization, and optimization. Hearing loss disrupts this complex interplay, so hearing systems need to account for it, and include features that help restore it.

That's why HANSATON hearing systems are developed based on a "hearing intelligence" strategy, with the goal of helping restore natural hearing intelligence.



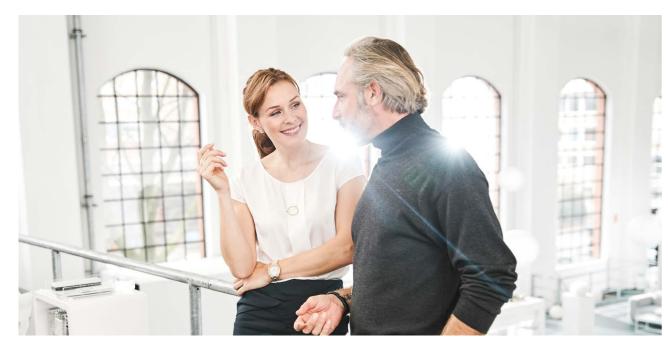
# Detection of the acoustic environment. Quickly and precisely.



The natural hearing process involves capturing and assessing the acoustic environment quickly and precisely at each moment. Our brains do this completely automatically and without our being aware of it at all. This is the only way that the brain can process and evaluate the auditory experience. Speed plays a decisive role in the detection of the acoustic environment because the input signal serves as the basis for all further processes.

### HANSATON feature: SurroundSupervisor SHD

The SphereHD chip from HANSATON is able to detect the environment practically in real-time. It uses more than 30 high-resolution sensors to analyze the acoustic environment nearly 700 times per second. As a result, the hearing system not only detects the acoustic environment quickly, but also very precisely. This creates a realistic model of the acoustic environment, which is passed on to signal processing as a starting input value. By optimizing our algorithms and storage capacity management, we have made our environmental detection program significantly faster, and improved the precision of our speech detection module. This allows the detection process to happen imperceptibly, thereby conveying a natural auditory experience.



## **Automatic adjustment.** Exact and unnoticeable.



The automation function of natural hearing intelligence refers to acoustic versatility whereby the ear receives, passes on to the brain as information and can produce correspondingly appropriate reactions. Thus no acoustic situation is the same as another. Our acoustic environment not only consists of speech, sounds or noises. It is composed of many of these individual components. There is no single standard situation. Instead, there is a mixture of the individual components, which reflects the actual acoustic situation. Since acoustic situations can change abruptly, the natural hearing intelligence reacts automatically to these changes and for humans, completely unnoticeably.

#### HANSATON feature: AutoSurround SHD

HearIntelligence<sup>™</sup> hearing systems aim to reproduce these natural conditions with their signal processing in order to make the hearing experience natural. The high speed and precision of the SphereHD chips make it possible to model the environment quickly, precisely and in a multi-faceted way. In order to restore hearing intelligence, HearIntelligence<sup>™</sup> hearing systems do not work with fixed programs, but are able to detect and mix different acoustic features – automatically, infinitely variably, and naturally.



# Localization of acoustic signals. Naturally and surely.



When we cross a road, we hear a car approaching before we see it. And good hearing is also important for our orientation. So we know not only that a car is approaching us, but also where it's coming from. Thus, while the eyes only report to our brain whatever is precisely in our field of vision, hearing plays a large part in the orientation of spatial hearing, and even completely takes that role over in difficult viewing conditions or in the dark. The localization of sound sources helps with spatial orientation and is the prerequisite for being able to focus on certain sound sources. The outer ear is of great importance in this ability because of the different ways high and low frequencies influence it. And at the same time, it also compresses and amplifies the sound. Also, the pinna and concha as well as the individual shape of a person's head have an influence on the sound impression.

### HANSATON feature: SphereSound SHD

Accounting for these circumstances so that hearing system users can once again localize sound signals, and thus hear naturally, is a central aspect of the HANSATON hearing system development process and is a central aspect of HearIntelligence<sup>TM</sup>. Thanks to SphereSound SHD, the way the ear and head individually and acoustically influence sound is recreated. This results in more natural sound and makes it possible to localize sound sources more easily.



## Focusing on speech. Understanding without distraction.



Properly functioning hearing ensures that we feel comfortable in conversation and during leisure activities. It is able to eliminate noise so that we are able to focus very intensively on a different signal source. This works, for example, at the movies, when you understand the film perfectly, even though the people sitting next to us are rustling their bag of popcorn, or, in the case of the best-known acoustic example, when you're at a party with loud music, where despite that, you have no problem understanding the person you are talking to. In the case of a hearing loss, the hearing system technology has assumed this function. In the natural hearing process, listeners can automatically localize speakers and focus in on their words, while at the same time other, non-relevant sources of noise are simply blocked, regardless of what direction they are coming from. This is the only way to ensure impeccable understanding without unnecessary distraction.

### **HANSATON** feature: SpeechBeam SHD

HANSATON hearing systems with HearIntelligence™ help the hearing system user to focus on conversation partners in challenging situations such as loud family celebrations or restaurant outings. Regardless of which direction speech is coming from, SpeechBeam SHD focuses in on that speaker. In combination with innovative localization algorithms, the result is crystal-clear speech and greater ease of hearing.



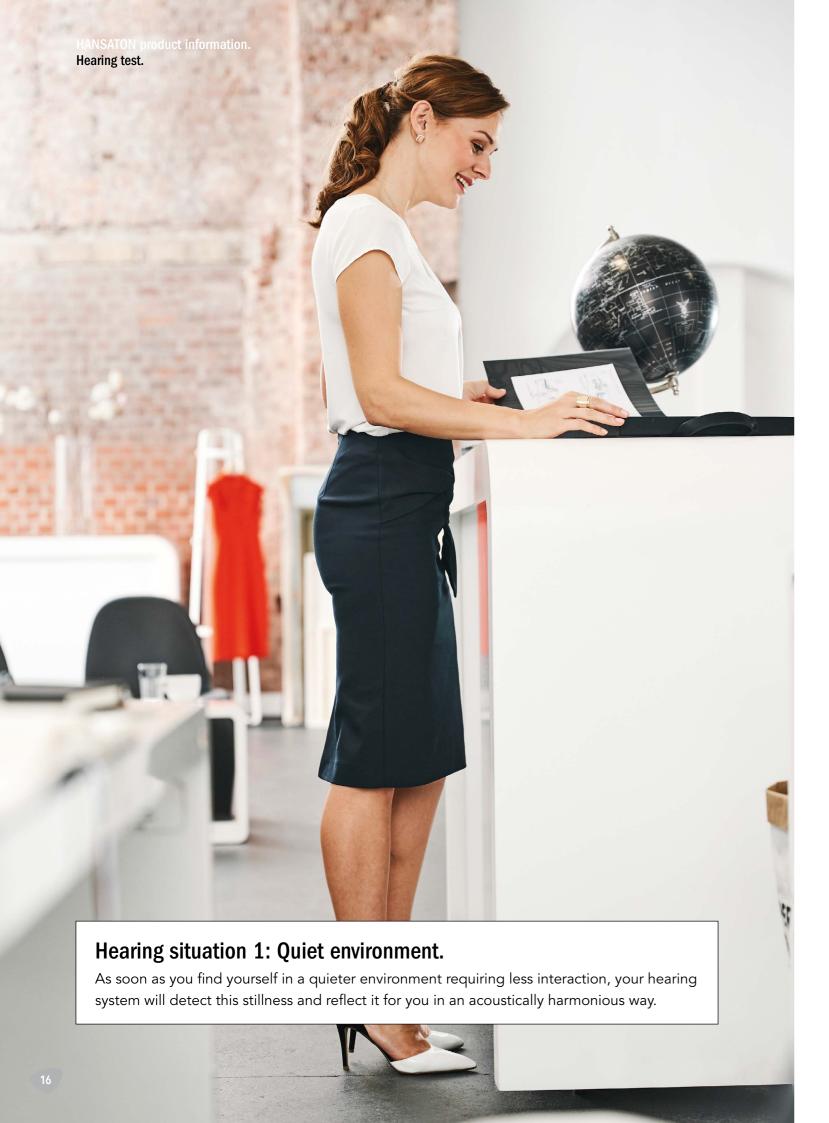
# Signal optimization. Hearing and enjoying.



The human body is capable of ignoring disruptive noise and concentrating on speech or sounds, or of identifying the signals it deems relevant and then perceiving them clearly and brilliantly. The HANSATON hearing systems with HearIntelligence™ also make it possible to optimize the incoming sound, thereby enabling natural hearing.

### HANSATON feature: SurroundOptimizer SHD

SurroundOptimizer SHD combines speech amplification, background noise suppression, and intelligent directional microphone characteristics in various acoustic environments to ensure that ideal, natural hearing is always the end result.



## Not sure?

## Find out whether you suffer from hearing loss.

Of course this test is no substitute for an in-depth conversation with your hearing systems specialist. However, if you answer »Yes« to more than three questions, it may be an initial indicator that you have some degree of hearing loss.

Test yourself:

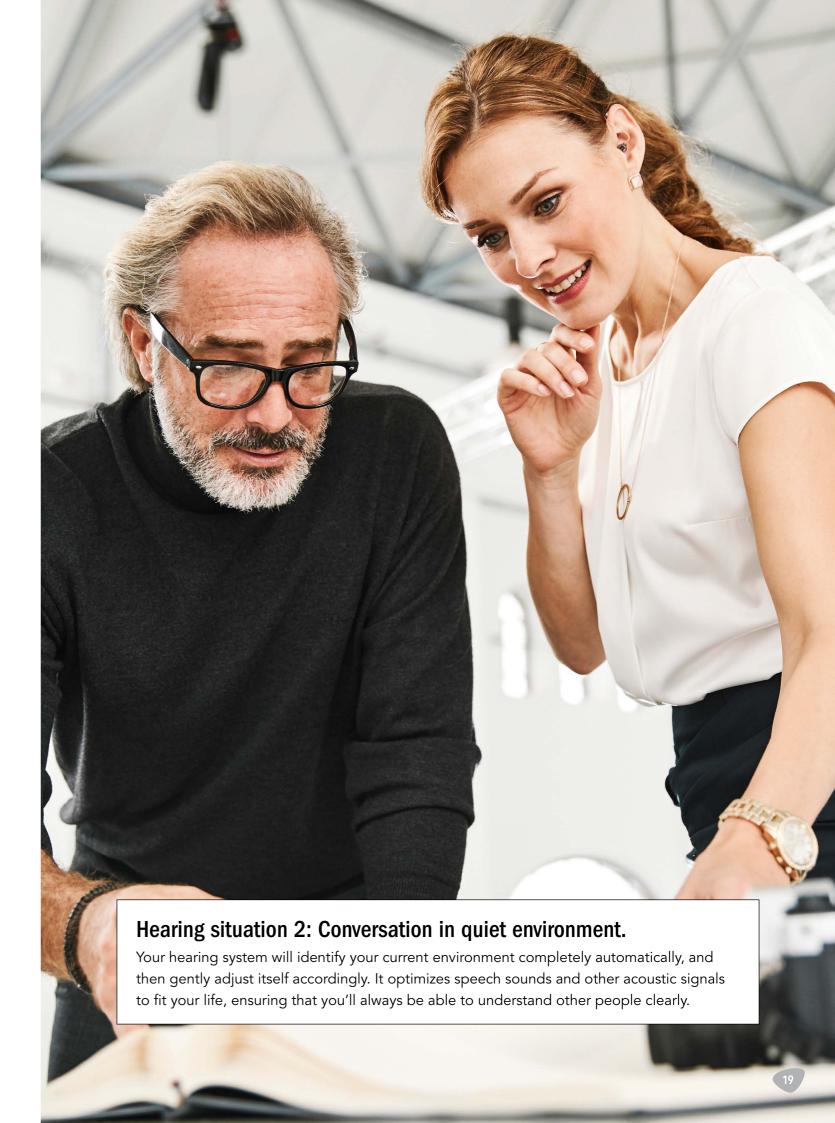
1. Do you find you no longer hear ticking clocks?	○Yes	○ No	
2. When you attend plays, do you have a hard time understanding dialogue?	○Yes	○ No	
3. Do you feel like most people do not speak clearly?	○Yes	○ No	○ Sometimes
4. Have you noticed that you hardly ever hear birds chirping anymore?	○Yes	○ No	
5. Have you ever failed to notice an approaching car until the last second?	○Yes	○ No	
6. Do you have trouble following normal conversations with several people at once?	○Yes	○ No	
7. Do your relatives or neighbors ever complain that you turn the volume up too high on your TV or radio?	○Yes	○ No	○ Sometimes
8. Do you have difficulties on the telephone?	○Yes	$\bigcirc$ No	○ Sometimes

# Which hearing type are you? Do a preliminary test here!

Are you suffering from hearing loss? Talking to your hearing systems specialist will help you both figure out which hearing system is right for you. This quick test can give you an idea of which system may be most suited to your needs.

## Tick your answers:

1. How active are you?	O Highly	O Moderately	O Not very
2. Do you regularly go out to restaurants?	<ul><li>Frequently</li></ul>	Occasionally	○ Rarely
3. Do you listen to classical music?	Often	○ Sometimes	○ Rarely
4. Do you attend lectures or classes?	<ul><li>Frequently</li></ul>	○ Sometimes	○ Rarely
5. Do you take part in discussion panels or speak in front of audiences?	○ Frequently	○ Sometimes	○ Rarely
6. Do you drive with passengers?	<ul><li>Frequently</li></ul>	○ Sometimes	○ Rarely
7. How important is it to you to detect fine sound nuances clearly and naturally?	○ Highly	O Moderately	O Not very
8. Are you sensitive to noise?	OHighly	OModerately	O Not very
9. Do you often find yourself in a wide variety of hearing situations, either in business or personal life?	○ Frequently	Occasionally	○ Rarely





## Hearing situation 3: Conversation in small-group setting.

From chatting with someone to greeting many friends – new situations sometimes arise faster than one thinks. The AutoSurround SHD program takes that into consideration, so you'll always be perfectly prepared for any potential surprises.

## The jam SHD product family. HANSATON's in-the-ear hearing systems are as unique as your ear.

Every ear is different, and no two hearing loss profiles are alike. Each person has his or her own individual, natural hearing intelligence – a delicate interplay of various functions that make up human hearing. To help support your personal hearing intelligence, HANSATON offers hearing system technology attuned to your ear alone – because your ear is still the best hearing system of all.

Read on to find out more about HANSATON's in-the-ear hearing systems.



## Why choose in-the-ear hearing systems?

- They're as unique as your ear.
- They fit perfectly into your auditory canal, so they're very comfortable.
- Cutting-edge technology offers you a natural hearing experience.
- They're just so wonderfully small and discreet.
- They adjust automatically to your life, making them perfect for any listening situation.

20



# jam SHD in-the-ear hearing systems. In-the-ear technology - practically invisible.

HANSATON's in-the-ear hearing solutions are so small, they're barely noticeable. Hidden deep inside the wearer's ear canal, they boost individual well-being and provide a sense of security. Our dirt-repellent, plasma-coated hearing systems promise exceptional, long-lasting wearing comfort.

### Exceptional technology, maximum discretion.

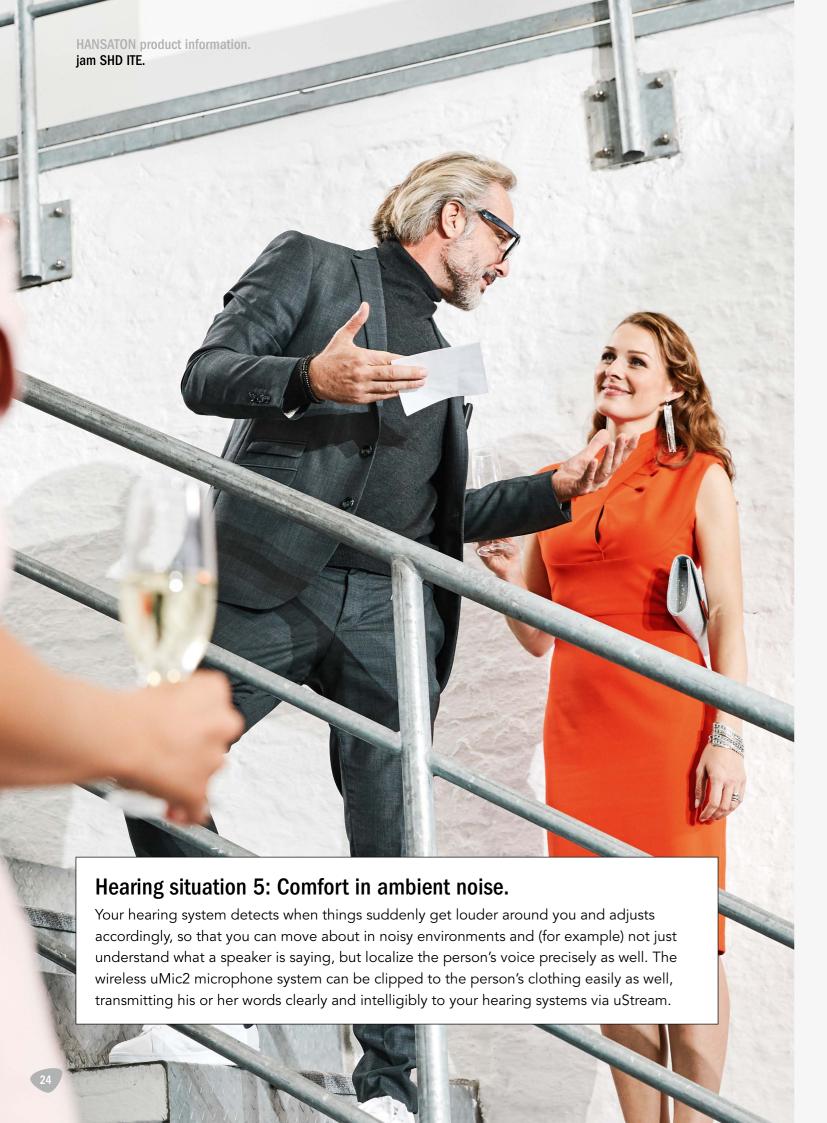
The jam SHD 10 is practically invisible when worn, and its built-in telecoils make it compatible with numerous accessories. Wireless functions and a dual microphone system allow binaural users to make optimum use of the automatic AutoSurround SHD program as well.



IIC
Thanks to its tiny hybrid, the jam SHD IIC is particularly small and sits very deep inside the auditory canal. It runs on a size 10 battery. It has a drawstring so that it can be removed from the ear canal easily. The IIC is practically invisible from the outside.



CIC
The jam SHD CIC sits about as far down into the auditory canal as the IIC and, thanks to its tiny hybrid, is equally invisible from the outside. The CIC runs on a size 10 battery. It has a drawstring so that it can be removed from the ear canal easily.



# As unique as your ear. Thanks to Individual Acoustic Modeling (IAM).

Thanks to cutting-edge 3D modeling technology, we can adjust not only the housings of our tiny hearing systems to fit your ear canal, but the microphones inside them as well. Evaluating several thousand data points on your individual ear mold helps us make sure that your hearing system is manufactured perfectly for your ear.

## The result? A better, more natural hearing experience.



Mini Canal
The jam SHD Mini Canal is worn inside the auditory
canal, and like other jam SHD systems, it runs on
a size 10 battery. Its placement deep inside the ear
and its flesh-toned surface make the jam SHD Mini
Canal a discreet hearing system solution. The jam SHD
Mini Canal can be removed easily using one hand.



Canal
The jam SHD Canal sits at the entrance to the auditory canal and usually runs on a size 312 battery. Its flesh-toned surface makes the jam SHD Canal another very discreet hearing system solution. It can be removed from the ear easily with the index finger and thumb.



Half Concha or Concha
The jam SHD Half Concha and Concha fill the concha
partly or completely. They generally run on size 312
or 13 batteries. Their flesh-toned surfaces make them
discreet. They can be removed easily with one hand.



## How stereophonic sound works. Intelligent hearing means natural hearing.

Acoustic environments are complex. We are surrounded by a variety of different acoustic signals, speech sounds, and noises nearly 24 hours a day, every day, week after week, for our entire lives. Our perception is heavily influenced by the shapes of our heads and ears, so each person's concept of "natural sound" is different. A number of different, complex, intelligent processes happen inside our brains automatically, all at the same time. For example, they detect acoustic signals, determine the signals' spatial locations, and evaluate their importance. Each person has his or her own individual, natural auditory intelligence.

Thanks to innovative SHD Technology the new HANSATON hearing systems are able to map the acoustic environment realistically and recreate a natural sound experience.

### **Detection of acoustic environments.**





The new jam SHD hearing systems are available in Performance Levels 9, 7, 5, and 3, depending on your preferences and needs.

### Performance Level 9 - First

Our top Performance Level allows you to experience unparalleled speech clarity and spatial acoustics. Even in extremely challenging acoustic situations, Performance Level 9 systems can localize sounds, and localize and precisely focus in on speech. As natural as never before and fully automatically.

### Performance Level 7 - Business

Performance Level 7 provides an individualized hearing experience. Hearing system wearers can perceive sounds and also focus in on speech precisely. The personal acoustic characteristics of the auditory canal are taken into consideration, ensuring a natural hearing experience in a wide variety of situations.

### Performance Level 5 - Comfort

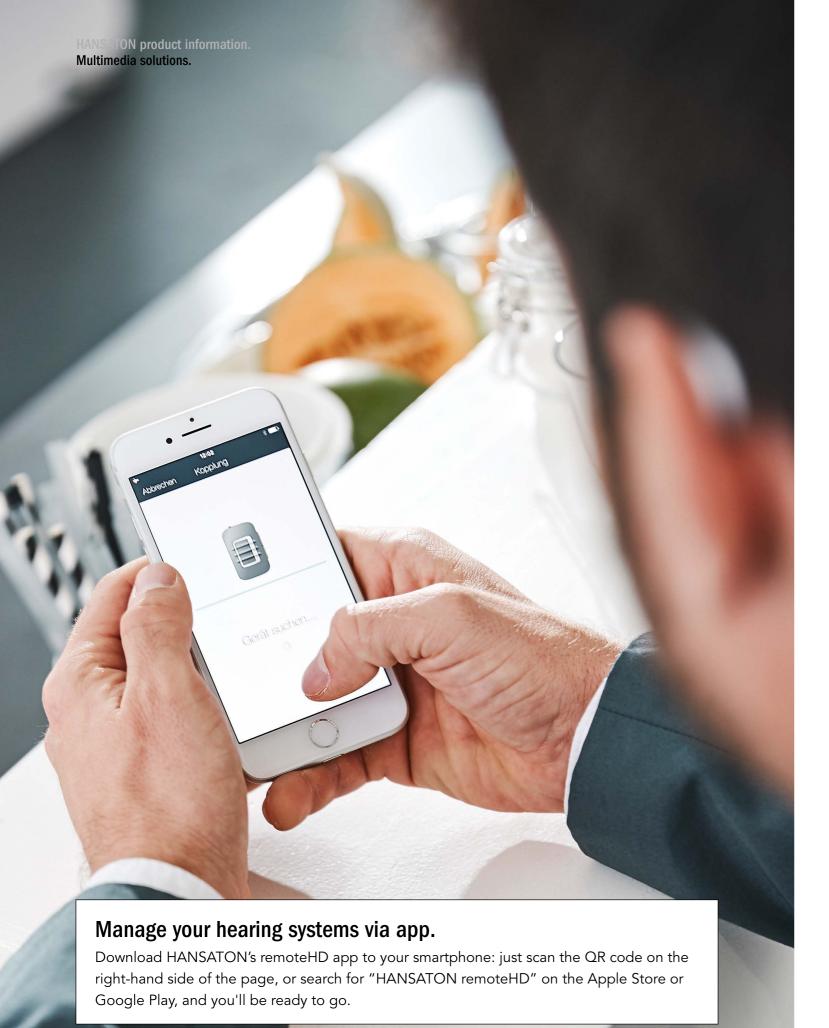
Performance Level 5 systems account for the way the wearer's head and ear shape naturally affect sound, providing a more natural hearing experience. They are capable of focusing in on relevant speakers.

## Performance Level 3 - Economy

Innovative technology ensures listening comfort and speech comprehension in the most important acoustic situations.







Performance features	9 (First)	7 (Business)	5 (Comfort)	3 (Economy)
Spatial acoustics with SphereSound SHD: Sound is influenced by the individual head and ear. SphereSound SHD takes these anatomical characteristics into account: for natural, spatially resonant sound.				
SphereSound SHD: Dynamic				
SphereSound SHD: Personal				
SphereSound SHD: Static AutoSurround SHD: An automatic program which detects a multitude of acoustic situations and which				
adjusts itself automatically without any manual switching.  AutoSurround SHD: Music				
AutoSurround SHD: Noise				
AutoSurround SHD: Conversation in a small group				
AutoSurround SHD: Conversation in a crowd	•		•	
AutoSurround SHD: Conversation in noise			•	•
AutoSurround SHD: Conversation in quiet	•	•	•	•
AutoSurround SHD: Quiet  SpeechBeam SHD: Focusing in on speech creates better and more natural speech clarity all round.	SHD-3	SHD-2	SHD-1	•
Multi-channel signal processing: The number of frequency ranges a system covers determines its flexibility in caring for hearing loss. The more frequency ranges, the more options for adjustment.	20 Channels	16 Channels	12 Channels	8 Channels
Multi-microphone technology: The use of multiple microphones ensures optimum speech clarity in every situation. The microphones' intelligent and automatic directional capabilities also create a uniquely natural sound.	:	:	:	
SurroundSupervisor SHD: More than 30 high-resolution sensors analyze the acoustic environment nearly 700 times per second for precise signal processing.	:	:	:	
Sound Impulse Manager SHD: Pleasant hearing without interference by sudden impulse signals.  Speech detection: Brings out speech while effectively suppressing disruptive		:	:	•
Noise reduction: Continually reduces background noise to provide pleasant sound in	:	:	:	
noisy environments.	:	:		•
Wind Noise Manager: Detects and immediately suppresses disruptive wind noise.  Digital Noise Reduction: Reduces background noise in quiet situations.	•	:	:	
Feedback Manager: Immediately suppresses annoying feedback – including on the phone.		•		
BiLink: Continuous, automatic synchronization of the two hearing systems ensures improved speech clarity and directional hearing, especially in noisy environments.				
<b>BiPhone</b> : During telephone conversations, the system transmits the speaker's voice to the other side to improve speech clarity and make conversation easier.		•		
PhoneConnect: Make telephone calls easily and reliably via the hearing system.				

Please contact your hearing professional for more detailed information.



# Multimedia solutions.\* Easy adjustments via smartphone.

Modern technology makes many things possible. Which is why HANSATON has tapped into the many advantages of the multimedia world and used them in creating little high-tech miracles: intelligent remote controls and multimedia devices for your sound SHD hearing systems.

For you that means more comfort, flexibility and freedom, along with the ability to operate your hearing system discreetly and unobtrusively in public. HANSATON's multimedia solutions and remote controls help you enjoy your newfound freedom to the fullest.

HANSATON offers accessory solutions to fit any hearing system – small and discreet, easy to operate, and multifunctional.





Apple App Store

Google Play Store

remoteHD - Operation via smartphone.
The remoteHD app lets you adjust your hearing systems quickly and discreetly using your smartphone (uStream or uDirect3 required).

Whether on the job or at home, Follow a conversation up to 20 meters away without difficulty. Simply clip the small transmitter microphone uMic2 to the clothing of the speaker and have the person's voice transmitted to your hearing systems via uStream.



### **Clever streaming with uStream**

HANSATON's new uStream offers you maximum freedom: not only can you change the volume and programming on your hearing systems, you can also connect Bluetooth-compatible devices (such as smartphones). The best part: the uStream is barely noticeable. It can be clipped easily and discreetly to clothing without the need for a cable



### Full TV enjoyment with uTV3

uTV3 transmits audio signals from the television, the computer, or the stereo to the hearing system via the uDirect3 remote control – simply and comfortably using Bluetooth. The multitalented device does more than just allowing the wearer to regulate the volume of the transmitted audio signal. HANSATON's uTV3 also serves as a charging station and holder for the uDirect3.



#### Simply convenient: the remote control RCV2

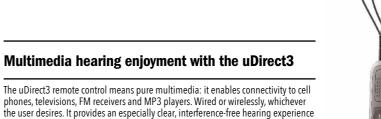
in a variety of activities.

uMic2 is a wireless microphone system that allows the wearer to understand a conversation partner better and more easily, even in acoustically difficult situations uMic2 can also be attached to the other person's clothing using an integrated clip. Speech signals coming from the conversation partner are transmitted via uDirect3 to the hearing system, where they arrive clear and easy to understand.



## uMic2: Understand conversation partners more easily

The RCV2 remote control allows discreet adjustments to volume controls and hearing system programs. What sets it apart are its simple, intuitive controls.





Big speeches, loud and clear. Easy to control via smartphone.

<sup>\*</sup>for hearing systems with wireless-functionality

## Hearing is quality of life. Nice to have you here.

We are glad that you have decided to learn more about our hearing systems – you've already taken the first step on your journey to greater quality of life through relaxed hearing and comprehension. Now the only question remaining which hearing system is the right one for you? The best thing to do is test them out together with your hearing health care professional, so you can take plenty of time to discuss your options thoroughly.

- 1. Free hearing screening.
- 2. Free advice.
- 3. Choose the perfect hearing solution.

Shape your life the way you want it to be – the newest jam SHD HANSATON hearing systems with innovative SphereHD Technology provide cutting-edge spatial acoustics, so you can experience natural hearing in all kinds of life situations.

HANSATON wishes you all the best!

