

## The Need for Conference Microphones

By Anna K Lejon

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### **Abstract:**

*Being a part of a community of colleagues at work is to take an active part of informal and formal meetings. 20% of hearing aid users are dissatisfied with their hearing aids in large meetings. Comfort Audio produces two conference microphones to capture sound from short and long distances. Each microphone incorporates Perceptual Speech Enhancement and Active Noise Reduction that can improve the signal-to-noise ratio (SNR) by up to 20dB.*

### **Meetings in working life**

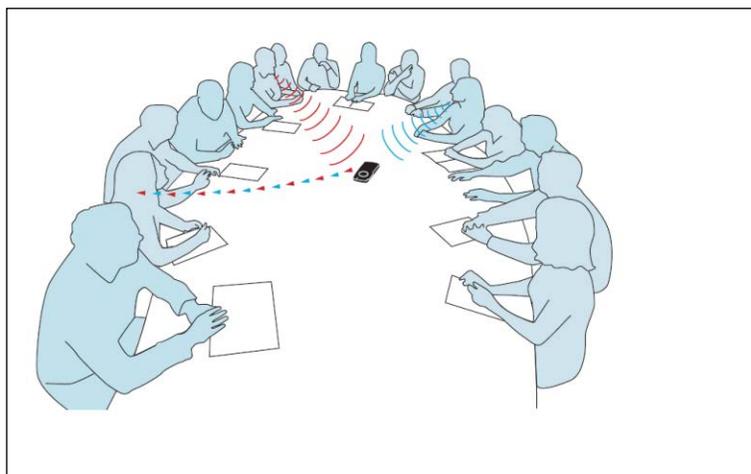
Meetings are a natural part of working life. Meetings are formal or informal and can contain critical information. Meetings are an important aspect of a community of colleagues, and often they include 'small talk' that may inspire and motivate participants. 20% of hearing aid users are dissatisfied with their hearing aid performance within larger groups, (Kochkin 2010). Present day hearing aids are advanced and incorporate enhanced functions of directionality and noise reduction, but often a hearing aid is not enough.

### **Reduced distance and background noise**

A frequent problem with large meetings is that key speakers are often at a distance from their audience. The further the distance, the more the sound is dispersed and the speaker's voice becomes less distinct from reflection and absorption of the surroundings. Background noise is always disturbing in this environment and contributions from audience members are more difficult to hear as they are facing away from many of the listeners. To overcome this problem a roving microphone can be passed between audience members, but a difficulty remains owing to our innate speed of response: we want to speak immediately when we are asked! The roving microphone demands great discipline from the audience contributor, or frequent repetition.

### **Comfort Digisystem Conference Microphones**

The Comfort Digisystem Conference Microphones DC10 and DC20 are designed for both short and long distances. Conference microphones may be placed in the middle of the table where a conference or meeting is held. A conference microphone captures the voices of the people sitting around the table. The DC10 and DC20 have different listening modes that can be selected by the user depending on the meeting dynamics, number and spread of participants.



*The conference microphone is placed on the table; the microphone picks up voices from around the table and transmits them to the hearing aid user.*

## **The technology behind the conference microphones**

Advanced digital sound processing techniques filter the speech, remove disturbing noises and transmit it wirelessly to a receiver that is connected to the hearing aid, cochlea implant or bone anchored hearing aid.

### **Secure Stream Technology (SST)**

Comfort Digisystem is built upon patented digital radio technology, SST. SST has a number of advantages compared to analogue FM-techniques. SST ensures high sound quality with minimal noise disturbance and a stable sound signal. For more information please visit [www.comfortaudio.com](http://www.comfortaudio.com) under the tab: For professionals/About digital radio technology.

### **Perceptual Speech Enhancement (PSE)**

The general term, PSE found in many articles and product specifications should not be confused with the PSE achieved with the most advanced and unique speech enhancement system used in Comfort Digisystem Conference Microphones. The PSE built into both systems, DC10 and DC20, is capable of distinguishing and to seamlessly manage speech segments of varying levels and from variable distances.

To enhance speech in any form of acoustical situation requires a vast number of signal processing systems to work simultaneously. Comfort Digisystem PSE analyses several different sound functions and subjects each to its own individual method of signal processing. Continuously balancing the combination of all the processes creates a completely new level of speech enhancement, and enables a person with a hearing loss to communicate in difficult acoustical environments that were previously not possible.

The continuous balancing of signal processes is accomplished by Comfort Digisystem's 'Seamless System Management Control Unit' and achieves a signal-to-noise improvement by 20dB whilst adapting to received acoustic variations.

## Conclusion

There are frequent situations where there is a need for conference microphones in a work environment. A hearing aid, cochlea implant or bone-anchored hearing aid is a good starting point, but none of them can enhance the signal-to-noise ratio as much as 20dB. This is what the Comfort Digisystem Conference Microphones DC10 and DC20 can achieve.

## References

Kochkin, 2010 Hearing Journal: January 2010 - Volume 63-Issue 1-pp 19-20,22,24,26,28,30-32