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Supplementary material

Experimental study of an implantable fiber-optic microphone on human cadavers

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In the supplement, a few audio records in a time duration of about 1-3 min, which are acquired during experiments performed on skull head #7587, are given. The signals have been on-line processed by TIFOS system and recorded by an HP notebook audiocard without any frequency equalizing. The sound pressure level was measured by Bruel & Kjaer 2250 sound meter (dBA, slow). The sound of piano and violin in Schubert's Rondo in Fig. S1a are of high fidelity. High frequency tones in the aria from "La-Traviata" performed by famous Russian-Austrian operatic soprano Anna Netrebko (Fig. S1d) are also very clear and dynamic. The famous speech of Martin Luther King (Fig. S1b) is completely intelligible, as well as the resignation speech of former British prime minister Theresa May (Fig. S1c). The individual characteristics of the well-known voices are easily recognizable.





 Supplement_Schubert_Rondo_56-76dBA.mp	 Supplement_Martin-Luter-King_58-78dBA.r	 Supplement_Teresa-May_59-70dBA.mp3	 Supplement_Netrebko_La-Traviata_52-80dBA
a)	b)	c)	d)

Fig. S1 Audio signals of some music, interview and speech sequences acquired at 32 kS/ch/s on cadaver skull #7587, online processed by TIFOS system and recorded by a HP notebook. The SPL has been simultaneously measured by sound level meter Bruel & Kjaer 2250 set nearby the cadaver skull; a) Shubert_Rondo_56-76dBA, b) Martin-Luter-King_58-78dBA, c) Teresa-May_59-70dBA, d) Netrebko_La-Traviata_52-80dBA

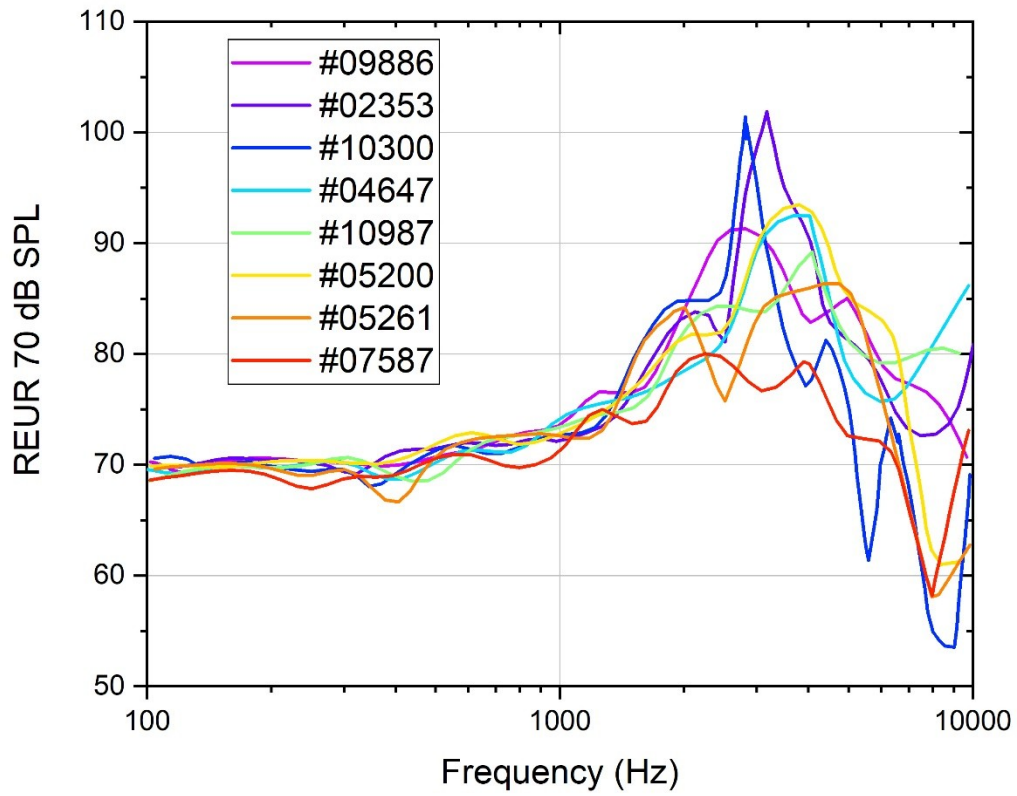


Fig. S2 The natural ear canal resonance – also named acoustic gain (REUR = Real Ear Unaided Response) measured by the in-situ audiometry headset (IHM60) of the Affinity audiometer.