

French company Skyted creates a mask that allows you to speak without making any noise.

[Tech Update] The ONERA, the French aerospace research center, has developed a metamaterial that serves as an acoustic absorber. Integrated into an ergonomic mask, it allows for communication without being heard by neighbors. An innovation that strongly interests special forces.

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ONERA and its partner Skyted have developed a military version of their silent headset.

Speak without being heard by your neighbor, no matter how close they are! That's the promise of the silent mask jointly designed by ONERA, the French aerospace research center, and the Toulouse-based startup Skyted. Called Voiceprotect and adapting to the shape of the face like a COVID-19 mask, it promises unparalleled acoustic discretion. It was presented at the ONERA booth during the innovation days organized by the Ministry of the Armed Forces in late November in Paris.

With such equipment, special forces members envision being able to communicate without being heard during missions that require the utmost discretion, as communication is done solely from headset to headset using miniaturized Bluetooth microphones and modems.

Neighbor "projected" 30 meters away

The reduction in sound volume is impressive, with an attenuation of 10 to 40 decibels (dB) over a frequency range from 500 to 5000 Hz. "It's as if the person talking next to you is actually about 30 meters away," illustrates Frank Simon, research director at ONERA.

To achieve this, the researcher adapted in-house technology used to reduce the noise from airplane engines and landing gear. This innovation relies on the use of a metamaterial that acts as an acoustic absorber. Its structure consists of miniaturized elementary tubes that serve as resonators capable of absorbing sound waves in a specific frequency range depending on their size and arrangement. This innovation has led to the filing of various patents by ONERA and Skyted.

Airlines and Zoom Already Interested

The ergonomics of the mask have also been carefully considered. Its design, which exposes the nose (on certain models), allows for easy breathing. Temperature is regulated by the presence of mini ventilation channels. There are numerous civilian applications, with the inventors already being approached by airlines to equip their passengers, enabling communication during flights without disturbing their neighbors. The Zoom video conferencing service is also interested in this technology.

The designers are also targeting markets such as call centers, open spaces, gamers, etc. ONERA and Skyted have competitors, including the Japanese group Panasonic. However, the latter produces a much bulkier and less ergonomic headset. The two partners plan to mass-produce thousands of masks starting next year. The unit cost for entry-level models is around 300 to 400 euros.

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