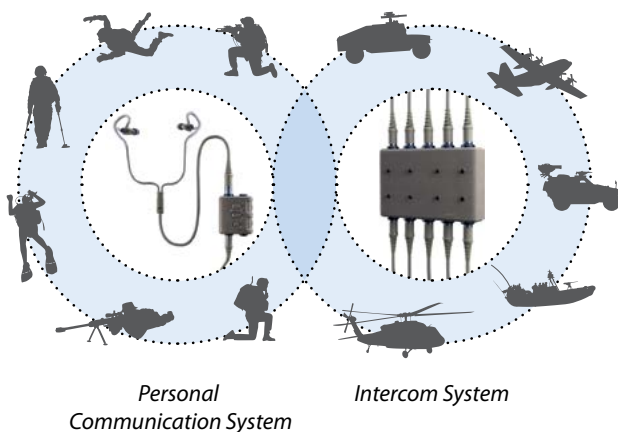


Tactical communications that work in all environments

Developing communication systems that help professionals in noisy and mission critical environments requires a lot of expertise. Here is an overview of the systems and technology behind INVISIO's market-leading communications offer

Q: INVISIO is a worldwide name in the defence industry, winning contracts across different continents; what are your product offerings and why are they so successful?

A: INVISIO's solutions are based on in-depth skills in acoustics and human hearing, as well as broad engineering know-how in electronics, mechanics, software and system integration. INVISIO's offer includes two systems that can be combined: a personal communication system, consisting of a headset, a control unit and smart connection cables, and then a portable intercom system for vehicles. The systems are used together with one or more radio units and can meet a variety of communication needs in terms of users' safety and operational capacity.



Q: We have heard a lot about hearing protection and its need for health reasons but protecting hearing can block critical sounds - how does your technology overcome this?

A: We need to look at our technology and systems as a whole. When addressing hearing protection there is a passive part and an active part: the passive hearing protection, provided by the headsets, reduces all ambient sounds and is mainly intended to protect against hearing loss that may arise as an effect of high noise levels over a long period.

The active hearing protection is provided by the control units. They reduce harmful acoustic pressure so that it does not exceed 85 dB (A). The electronic protection in the control unit reduces both high noise over a longer period – for example from aircraft – or sudden noise from a mortar burst, for example.

In order to retain situational awareness, the control unit makes it possible to amplify sound in the environment and even to a degree where you can hear things that a human ear does not normally perceive. The control unit allows you to manage different modes of situational awareness.

Q: Does it matter what kind of headset you choose – if it is an in-ear or an over-the ear headset?

A: Both types of headsets can provide excellent hearing protection while maintaining situational awareness and communication. But the INVISIO in-ear headset also takes advantage of the ear's shape to maintain a more natural situational awareness than other types of headsets.

Humans can perceive where sound is coming from because the sound hits the ears at different times and is reflected by the outer ear. Therefore, to help the user to hear ambient sounds correctly, INVISIO's in-ear headset has external microphones at both ears, placed at the start of the auditory canal. In that way, the sound is gathered at the same place it would have reached an unprotected ear. INVISIO's system allows the wearer to determine where the sound comes from and understand what is happening in the environment.

The other issue this raises for the modern warfighter is disruption-free speech. Human speech creates sound waves through the air, but also through the jawbone. The INVISIO in-ear headset X5 uses the jawbone vibrations to provide crystal clear communication. INVISIO's Bone Conduction technology conducts the vibrations from the jawbone with a specially developed in-ear microphone. The signals then travel through a digital filter in the control unit to be converted into clear speech. The construction of the Bone Conduction microphone and its location inside the ear blocks surrounding sounds and only transmits the wearer's voice to the receiver.



Q: So how is it possible that INVISIO's equipment is interchangeable and can even be used with 3rd party equipment without replacing controllers, headsets or other devices?

A: Our intelligent cables are the key to the versatility and user-friendliness of the INVISIO system and the reason why we are able to provide plug-and-play-integration between control units, headsets and our intercom system. When new equipment is connected to the control unit, identification is automatic via information in the cable, which is helpful as no reprogramming of equipment is necessary.

The INVISIO IntelliCable® technology also identifies externally connected units such as radios, intercom systems, mobile phones, computers and wireless PTT. The connection is fast and smooth as necessary sound and system parameters are set automatically.

Q: The other system that you mentioned is your unique intercom system, could we look at the innovations within this and its intended use?

A: The intercom unit is intended for use in vehicles, boats and helicopters. The system enables communication within the group, as well as access to the vehicle's radio system and communication with the driver of the vehicle in a far simpler way than has previously been possible.

With the help of the intercom system, users of INVISIO's personal equipment can connect to the vehicle's communication network by simply plugging in. This allows the intercom system to extend the area of use of personal equipment.

The system is so lightweight that it can be carried in a backpack and used when a group of users are transported in a road vehicle, helicopter or boat. The portable intercom system offers internal communication and connectivity in a vehicle environment that often lacks that functionality.

The intercom system can also be mounted in vehicles where cables are drawn to each seat and offer the same functionality as the portable solution – access to the vehicle's various radio sets, communication with both the driver and other personnel in the vehicle.

The intercom system has nine port connections to which an optional number of radio sets and users can be connected. Together, the personal equipment and intercom system form a complete solution for communication in all operative environments, with retained situational awareness and hearing protection for the individual users. ■

For more information visit: www.invisio.com

