



Speakerbus Netted Voice

Critical group communication for the
Government & Defence sectors



Executive Summary

Speakerbus Limited was established in 1984 in Hertfordshire, England, with a goal of supplying the world's leading financial organisations and government and defence sectors with global voice communication solutions. Since then, Speakerbus has expanded its global infrastructure to 11 offices across the United States, Europe and Asia, manufacturing and supplying global hoot and intercom systems to top investment banks such as Barclays, Morgan Stanley, HSBC, and Standard Chartered. Speakerbus products are used by nine of the top ten securities firms and installed in 30 countries around the world

Speakerbus have long understood the urgency associated with broadcasting vital, confidential financial information to the right people quickly and efficiently. In response, Speakerbus' Netted Voice solutions offer persistent, secure, flexible, interoperable communications to this rigorously demanding sector.

First Responders, Strategic, Tactical, Joint and Coalition Forces depend on up to the second communications. Netted Voice allows these groups (who may use different equipment & frequencies) to communicate as if all on the same system.

Similarly, government and defence clients, such as the military, homeland defence, first responder and maritime markets, depend on up-to-the-second, mission-critical communications systems. Netted Voice offers the critical advantage of enabling these disparate groups which often use different equipment and frequencies to communicate seamlessly as if all on the same system.

In fact, the term "Netted Voice" describes the linking of diverse communications technologies: GSM, PSTN, PABX, Radio UHF, satellite networks, SATCOM, LAN, WAN, VPN, Microwave and Wi Fi radio. Speakerbus gateways integrate all these components and their various network technologies to enable consistent, secure voice and data communications.

In a typical military usage scenario, the Speakerbus Netted Voice push-to-talk (PTT) solution is typically configured to provide secure Netted Voice communications across a variety of sites: on officers' desks in the component headquarters, in theater field operations, or installed in mobile assets. Commanders and their forces can then communicate instantly with each other directly or in groups, with just a press of a button. An officer at the HQ receiving a call can instantly bring others into the conversation from anywhere in the world, whether via fixed landline, mobile phone, or field unit radio simply by selecting their name from the intuitive Speakerbus gateway Voice Conference Manager (VCM) PC application. Speakerbus' VCM does the rest, calling each party instantly and quickly bringing them into the conversation, eliminating the need for and alleviating potential security issues associated with using third party services.

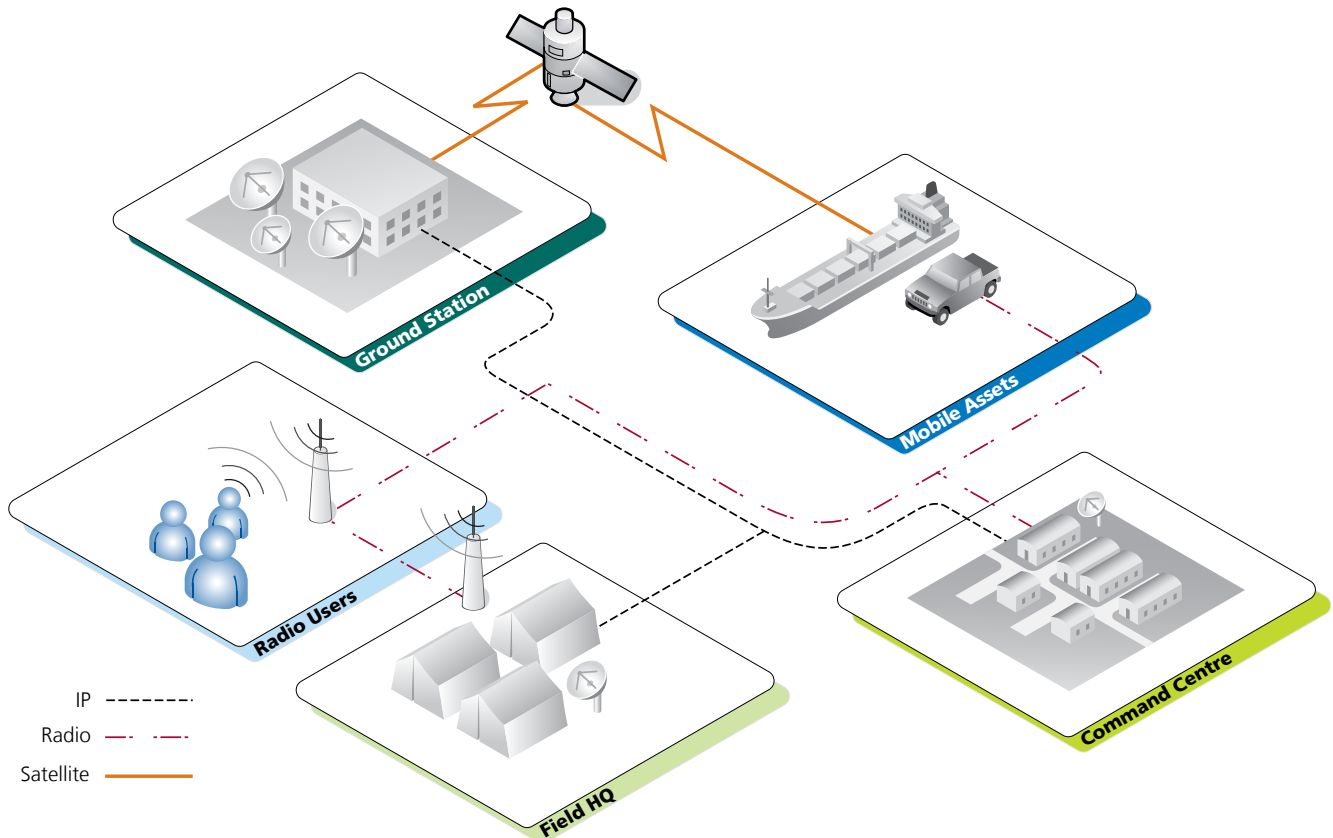
Now more than ever, security and defence forces demand more cost effective and immediately deployable forms of communication. As such, all Speakerbus group communications solutions are

- Robust - Persistent connections, service re-establishes automatically after loss of communications
- Secure - Supports military grade hardware encryptors
- Simple - Minimal training required to change device settings or channels
- Cost effective - Compatible with Commercial, Off the Shelf Technology
- Adaptable - Variety of end points can support multiple theatre scenarios or applications

Speakerbus solutions are successfully used by Paradigm (contractor for the Skynet 5 contract with the UK MoD), and have recently been on trial at the British Armed Forces' Royal School of Signals with favourable results. Our Netted Voice systems are also installed and in use in a number of confidential, undisclosed locations.

Netted Voice overview

A typical Netted Voice solution



Speakerbus' Netted Voice solution is critical in delivering over-the-horizon communications both at a strategic and operational level. The infrastructure illustrated above represents how a Netted Voice solution might be delivered in a typical military or government scenario.

At a strategic level, users at the Command Center or Field Headquarters (HQ) have the ability to achieve near-instant communication with their forces via the push of a button. By "netting" a diverse number of communication mediums, commanders can seamlessly contact their units whenever desired, regardless of equipment or location. This allows commanders to concentrate on prioritising messaging and the timely broadcasting of critical information. No matter where forces are located or how they are connected to the net, they all receive mission-critical information at the moment it's most needed.

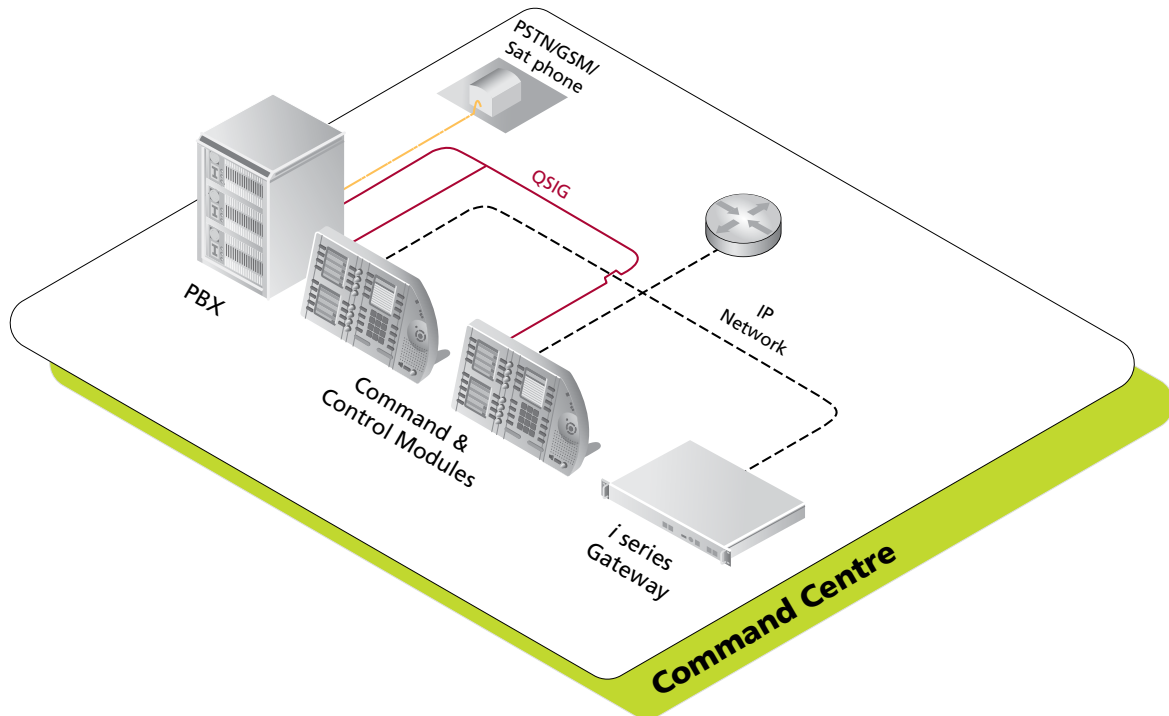
At an operational level, any communications system is dependent on its mobility both for deployment and procurement. As such, system modules are designed to be easily deployed—and redeployed—for the right application, at the right time.

With the addition of a radio gateway, radio users can also gain access to the Netted Voice network. Modules developed for Command Centers (such as Speakerbus' iD808), while not ruggedized, are nonetheless protected in transit, i.e. transported in ruggedized flight cases. Features like this combine to make the entire system suitable for rapid procurement and deployment via an Urgent Operational Requirements (UORs) route.

Netted Voice also supports transport over Mobile Satellite Service (MSS), enabling remote users to access the net from anywhere across the globe. With the addition of end-to-end hardware encryptors, all communications remain confidential while in transit. Following are several application use cases describing how Speakerbus Netted Voice products can meet the complex demands of a government or military communications network.

Application Use Cases

The Command Centre



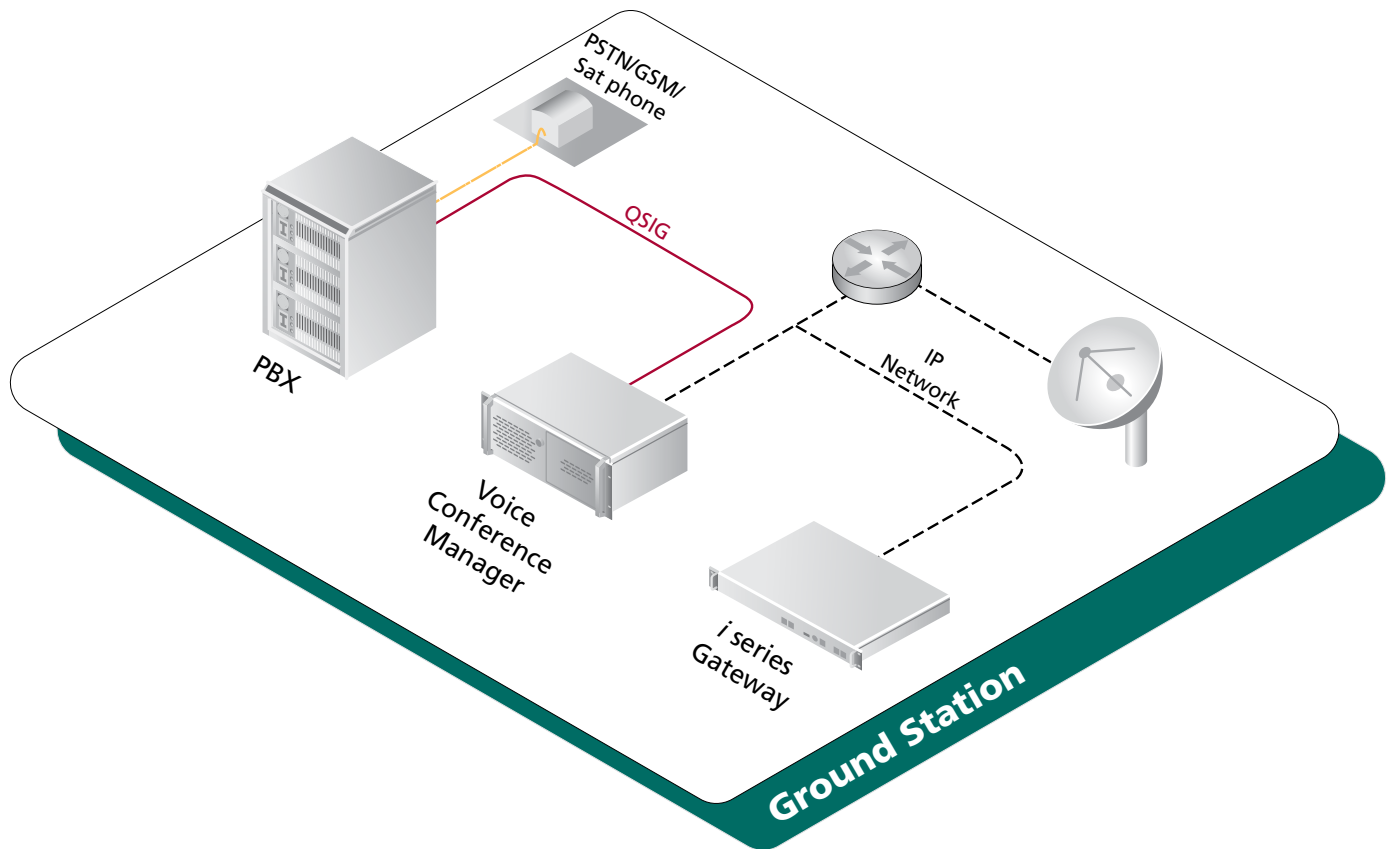
From a secure Command Centre, operators using a Speakerbus Netted Voice system have full access to the netted radio, PBX and satellite communication groups via the Speakerbus Command and Control module - *i* turret (iD808).

The *i* turret is an IP enabled feature rich phone capable of monitoring, routing and managing communications within the Netted Voice solution. SIP, PSTN, GSM and Sat call setups are managed by a compatible SIP enabled PBX and directly accessed from the *i* turret. The *i* turret requires a low skill level to change device settings or channels, reducing any associated training costs.

A dedicated *i* series gateway converts analogue interfaces such as 2-wire or 4-wire E&M/FXO/FXS or digital interfaces such as E1/T1 signalling to Speakerbus Real Time Protocol (SbRTP).



The Ground Station



In this scenario the Ground Station houses a centralised Voice Conference Manager (VCM), a scalable PSTN bridge with group conferencing facilities. The VCM manages telephone lines by bridging and auto dialing predefined Netted Voice users, or groups, at a set time or instantly as mission progression dictates.

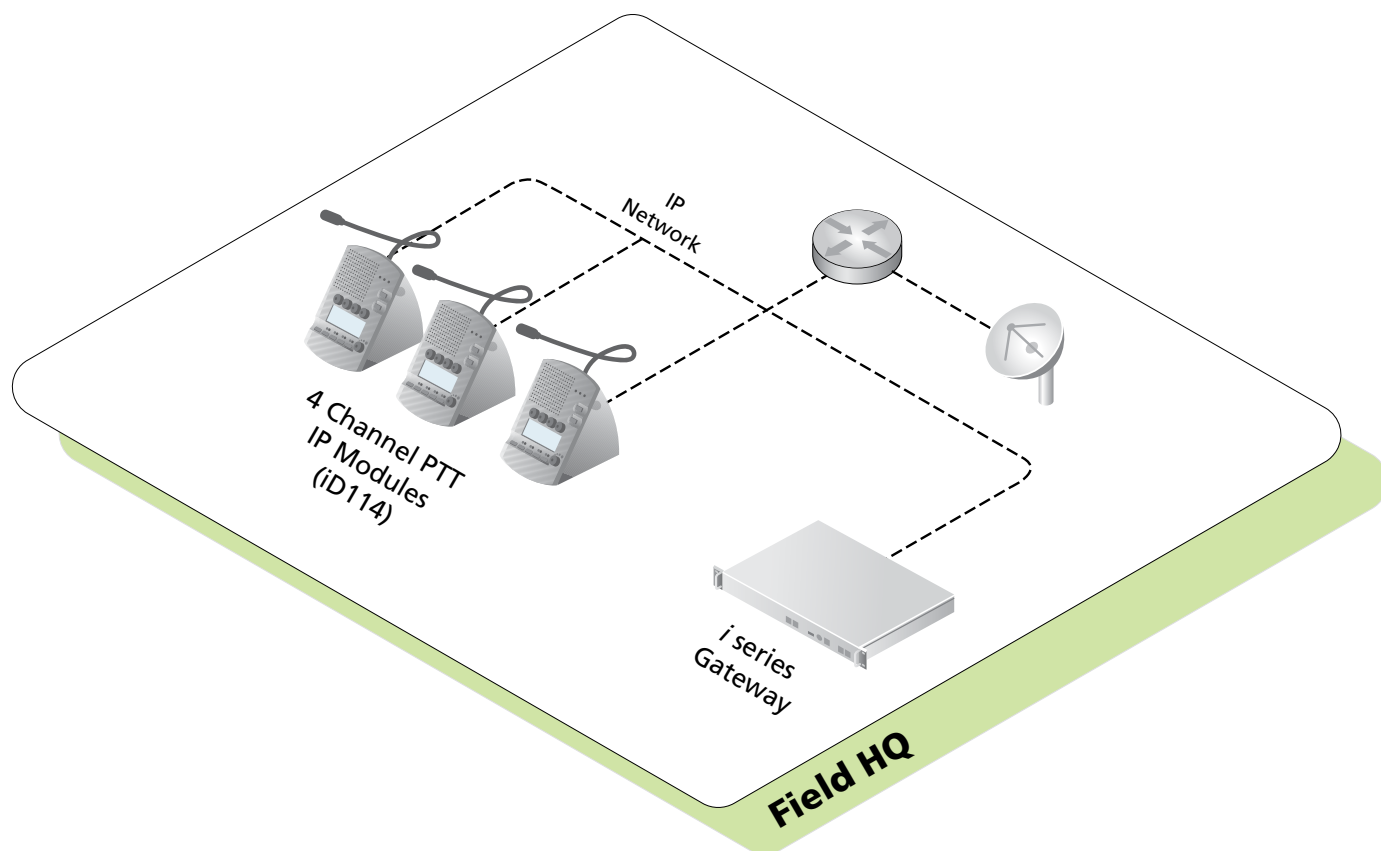
Operators manage the VCM from a simple web browser. Using a clear easy to use 'Drag n' Drop' user interface, network reconfiguration is quick, enabling immediate communications and enhancing operational reaction times.

VCM conferences can be accessed from a GSM mobile, Speakerbus radio gateway, or a standard PSTN phone with the correct security credentials. This offers greater cost effective communications as any Commercial Off the Shelf device with Dial Tone can be quickly connect to the Net.

Interactive Voice Response (IVR) simplifies access and security validation. The VCM supports E1/T1, and FXS interfaces.



The Field HQ



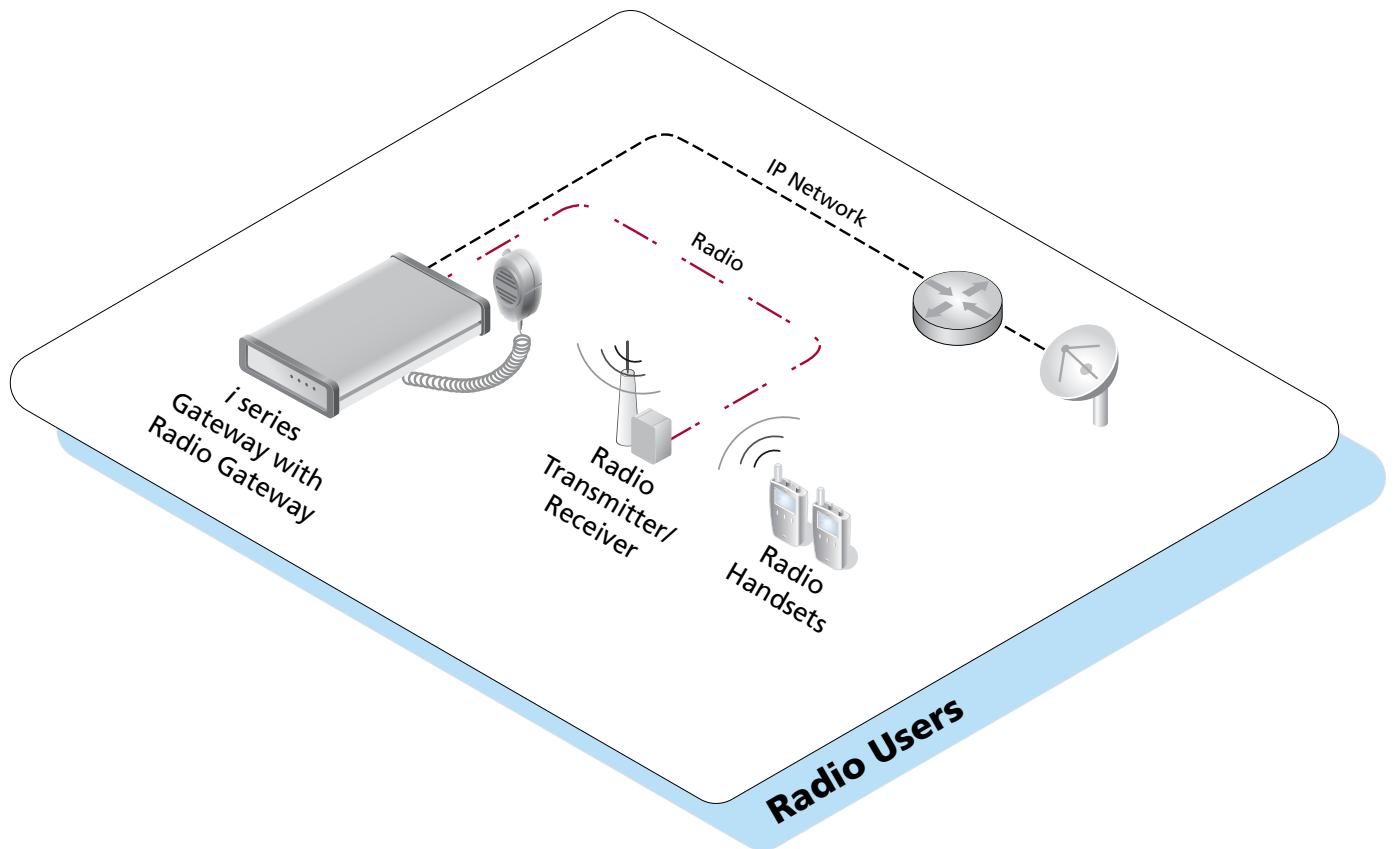
At the field HQ Netted Voice traffic is delivered by a 4 channel IP module. A desk station, like the Speakerbus iD114 uses a 'Push To Talk' (PTT) communication method, enabling near instant communication to pre-defined groups of users with a single button press.

An *i* series gateway converts IP traffic already encoded from a variety of end points. This IP traffic is then converted to SbRTP within the *i* series gateway and is fed back to the iD114 and outputted as voice.

By simply selecting a channel, an officer can talk to a group of users, whether they are on landlines, mobiles or radio devices. This flexibility ensures integration with existing COTS devices, making the solution highly cost effective. Automatic programming of gateways and endpoint facilitates quick and simple deployment and redeployment. Units are easily configured remotely via a web-based application (*i cms*), and all devices are backed up offsite for fast recovery if damaged.



The Radio Users



Even in today's Internet-enabled battlefield, there still exists considerable demand for radio communications. The addition of a *i* series radio gateway to a Netted Voice network enables linking these users with others in a cost-effective and simple way.

The gateway converts IP voice traffic from the voice net to analogue voice, before transmitting these communications to the field radios via a radio transmitter. In reverse radio users can talk back to other users/groups on the net, just as they would to local radio users.

Commanders located at the HQ are able to re-configure device channels continuously using *i* cms, matching in field environments in real time.



Conclusion

The previous use cases have demonstrated the flexibility and key benefits of the Speakerbus Netted Voice solution.

The true essence of the Netted Voice solution is its ability to deliver an open conference where everyone receives key information at the right time.

We have shown by 'netting' communication mediums commanders can seamlessly contact their units whenever desired, regardless of equipment or location. Allowing commanders to concentrate on prioritising messaging and the timely broadcasting of critical information. No matter where forces are located or how they are connected to the net, they all receive mission-critical information at the moment it's most needed.

The key benefits of each Netted Voice solution are:

- Robust - Persistent connections, service re-establishes automatically after loss of communications
- Secure - Supports military grade hardware encryptors
- Simple - Minimal training required to change device settings or channels
- Cost effective - Compatible with Commercial, Off the Shelf Technology
- Adaptable - Variety of end points can support multiple theatre scenarios or applications

To discover how Speakerbus can help you realise the benefits of our Netted Voice solution please contact one of our local offices on the back page of this paper. Alternatively you can visit www.speakerbus.com to see our range of products.



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