Mobile Data Node

Access to mobile ‘apps’ in remote, hostile and extreme environments
MDN – Mobile Data Node

Combining Inmarsat’s BGAN service with SEA’s MDN delivers a man-portable, global, 3G base station to even the most inhospitable theatres of engagement.

Armed forces across the world continually seek ways to gain and maintain an operational edge over their rivals. To do so, they are increasingly adopting the innovative and disruptive technologies sometimes referred to as the nexus of forces: social interaction, mobility, cloud and information.

Inmarsat has partnered with SEA to deliver into military theatres the technology platform that underpins this innovation. Smartphones and tablets are powerful, versatile tools for information capture, data processing and communications. Mobile apps can rapidly and affordably deliver improvements in operational capability, in areas such as intelligence gathering, combat engineering, logistics, maintenance and battlefield medicine.

The global coverage of Inmarsat’s BGAN service and the exceptional portability and ease of use of both BGAN terminals and the Mobile Data Node make it possible to exploit the full operational potential of these mobile devices.

Sample Applications

Since 2009 the sophisticated yet easy-to-use advance ballistics programme BulletFlight has been used by military snipers to improve their ability to hit their targets at long distances. This app is a customized version of a commercial app.

The ExData app is a portable data resource and ready reckoner for bomb disposal operators, allowing them to estimate important planning factors such as fragmentation hazard areas and likely injuries to personnel.

Accurate and up-to-date information about local land-mines, IEDs and unexploded ordnance is provided by other apps such as CAT-IED and CAT-UXO. These aim to reduce casualties by drawing on extensive databases and enabling users to share new information as they discover it.
In combination, BGAN and the Mobile Data Node provide military forces with a portable, easy-to-use and flexible way to maintain their broadband connection wherever they deploy. The Mobile Data Node’s 3g capability generates a “bubble” of cellular network connectivity 1km in diameter, within which users can use their mobile devices and smartphones. This powerful communications capability will enable governments to exploit the full potential of mobile apps to enhance military capability beyond the terrestrial cellular footprint.
**Features:**

- Private Network - Provides a private 3g mobile network operating in UMTS Bands I, II, IV, V and VIII. (Spectrum rights or a waiver will be required)
- Stand-alone - Independent from any local infrastructure, with complete control over connections and bandwidth
- Multiple users - Up to 16 simultaneously connected users
- Low Power - Less than 21W peak power consumption from an external 9-36V DC power source
- Manpack or Vehicle Fitting - External mounting points allow secure integration within a vehicle
- Robust and Rugged - IP 67 rated
- Lightweight - Just 1.3kg without battery

**Benefits:**

- Military Exploitation of Massive Commercial Investment in Mobile Devices
- Rapid Development and Deployment of Software
- High Quality User Experience and Enhanced Buy-in Through Re-use of Familiar Hardware
- Real-time Reach Back
- Information Superiority Through a Proliferation of Data-gatherers
The Challenge
The potential of mobile apps to increase military capability is enormous. However, the ability to realise this potential depends entirely on access to mobile broadband communications. This is a real challenge because many, if not most, military and government operations are conducted beyond the reach of terrestrial cellular networks.

The Solution
The man-portable Mobile Data Node when combined with the L-Band satellite backhaul and terrestrial network provided by Inmarsat’s Broadband Global Access Network (BGAN) provides a solution to this challenge. Inmarsat’s networks provide onward connections to VPNs, the public telephone network, and the Internet.

The Mobile Data Node is a highly portable, rapidly deployable and secure communications base station that provides 3G voice and data coverage up to 500 metres from the BGAN terminal. Up to 16 mobile devices, including tablets and smartphones, can connect to each Mobile Data Node simultaneously. It contains a miniaturized but fully functional integrated core services network, which allows it to operate whether stand-alone or connected through a standards-based, IP network such as BGAN.
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