BGAN PATROL

Beyond Line of Sight connectivity in the field while on-the-move

USER PROFILE

CURRENT AND EMERGING NEEDS

CONOPS

- User is isolated from base and platforms

- On foot or on small ATV/quads

- Rely on LOS comms today such as 3/4G. Often not available, not trustworthy and leaves unwanted digital footprint

- Current satcom systems: pause, deploy terminal, communicate, stow and continue. Vulnerable and out of comms between sessions

- COTM solution would enable brief pauses and live, two-way, situational awareness updates

CORE REQUIREMENT

- On-the-person, on-the-move User Terminal

- 50 - 100 kbps BGAN background IP

- Extend existing LOS IP connectivity to defence applications

- Interface with other equipment and data/power sharing via body worn hub systems

TYPICAL APPLICATIONS

Military personnel carry smart tablets, such as Samsung Tactical devices, to communicate, drive mapping applications and provide data to applications vital to gaining an operational advantage over adversaries in the field, whilst ensuring they are protected from Blue-on-Blue incidents

APPLICATIONS:

- Mobile Ad-hoc Network (MANET) and Beyond Line of Sight (BLOS) radio networks
- Blue Force Tracking (BFT) of allied forces on live maps
- Access to offline mapping data enables operations in GPS denied environments
- Laser range finder data to provide an exact distance to long range targets for snipers and artillery
- Enablement of Battle Management Systems, such as ATAK and SitaWare
- Calling for Casualty Medical Evacuation (MedEvac) or automatic awareness via man down sensors
- Red Force Tracking of enemy force positions and movements
- Firing Direction and Orders from command
- Text Chat
- Photo sharing for intelligence gathering and target confirmation and approval

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A system overview for the next 2-3 years

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OVERVIEW OF REQUIRED SYSTEM

GENERAL CONCEPT

Up to 100 kbps BGAN background IP connectivity

L-band Omni antenna

(Telescopic) Pole to mount antenna above head but enables rapid retraction and cable connection to BGAN

BGAN Patrol UT

Dimensions

Glenair Mighty Mouse
8070-1675-07ZNU6-6SY
POWER & DATA

TNC
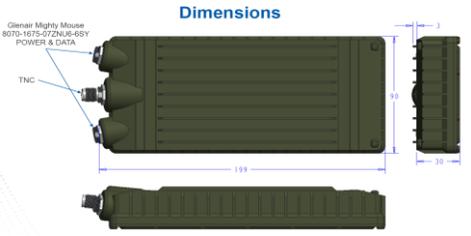
PROPOSED BGAN PATROL UT

Available 2024

Wearable Android Tactical End User Device (customer specific)

Glenair StarPan Power / USB Hub
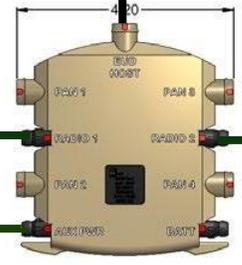
Military Battery Cap and battery (BB-2590/5590 or MBITR/152) to power all devices

MANET LOS radio to connect to peers

Could also support L-TAC BLOS voice link

Additional devices, such as DAGR GPS, laser range finder, etc. can be connected via the StarPan to BGAN

EXISTING SYSTEM

BGAN PATROL

CLASS 3 BGAN SYSTEM FOR USE ON FOOT, ON THE MOVE
TRIALS TAKING PLACE WITH PROTOTYPE UNITS TODAY
COMMERCIALLY AVAILABLE FROM Q3 2022

Initially limited coverage (min ~30° elevation)

Full global coverage with Class 13 software
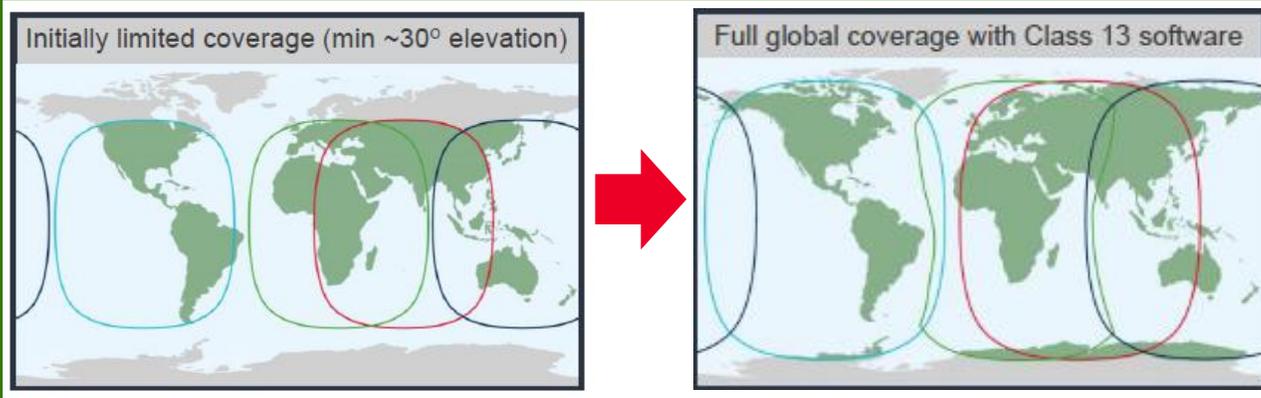
Utilises current BGAN Class 3, but with restricted coverage. Inmarsat ELERA enhancements will enable the product to develop to full global coverage by 2024

- BGAN product development to meet on the move requirement
- Omnidirectional Satcom Antenna
- Internal battery provides a UPS solution
- Users expected to connect an external military battery: Direct 10-24V DC to BB-25/5590 or MBITR/148/152 cable available
- Users can also connect via power data/hub adaptors such as the Glenair Starpan
- Telescopic pole enables the antenna to be deployed above the head, for clear line of sight and user safety (30cm separation recommended)
- Modem unit size: 216 x 216 x 41 mm, Weight: 1.4 kg, IP65 rated
- Ports: 1 Ethernet (RJ45), 2 voice/fax ports (RJ11), WIFI hotspot
- Gui via Mobile app iOS and Android or any browser

LOCKING KNOB

CANISTER FOR STRAPPING

POLE RETRACTED

POLE EXTENDED

Available Q4 2022

FIRST CONSOLIDATED FEEDBACK

- 15 BGAN Patrol prototypes built in October 2021 for end user trials

- **Trials concluded by January 2022**: (MAR)SOF units in Netherlands, France, Germany, Belgium, Australia, Canada, New Zealand, United Kingdom, Japan, Singapore, Denmark.

- **Ongoing/planned trials until June 2022**: (MAR)SOF units in Netherlands, Belgium, Italy, Austria, Hungary, Colombia, Chile, Argentina, Brazil, Indonesia, Philippines, Brunei, Taiwan.

- **Feedback (very) positive so far**
  - Stable connection while on-the-move (> 35 degrees elevation, < 40 km/h)
  - Well suitable for urban and open terrain operations, not in (heavily) forested terrain
  - Ease of use, intuitive GUI
  - MANET IP network compatible providing BLOS IP connectivity
  - Overall much better performance of omni-directional antenna then expected

- **Suggestions for improvement**
  - Change of RF cable (longer)
  - Option for choice cannister/telescopic pole and L-TAC pole with flexible top
  - External GPS antenna (outside backpack)
  - IP67 waterproofing for RHIB/Diving operations
  - TNC instead of SMA RF connector: tool free
  - Improve ruggedness in production versions
  - Connection external mil. battery essential

BGAN PATROL
CIVIL USE - EVERYONE IS A NODE

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THANKYOU