

Arqit and Blue Bear successfully demonstrate quantum safe military drones

Quantum encryption leader and unmanned systems supplier actively manage data security on autonomous drones in the dynamic environment of an integrated battlespace.

London, UK – 15 July 2022 – [Arqit Quantum Inc.](#) (“Arqit”), a leader in quantum encryption technology, and [Blue Bear Systems Research Ltd.](#) (“Blue Bear”), a pioneering supplier of unmanned and autonomous systems for defence and civil customers, today announced the successful demonstration of a quantum safe communication channel to secure data transmissions– powered by Arqit’s QuantumCloud™ technology hosted on Blue Bear’s Smart Connect™ device, an ‘inter-swarm’ autonomy brain that tasks multiple uncrewed systems to deliver collaborative multi-domain missions.

This is the first time C4ISR quantum safe communications with rotating symmetric keys has been enabled using a lightweight software protocol for small drones.

On 29th June and 12 July 2022, Blue Bear simulated and flew mock ISR (Information Surveillance and Reconnaissance) missions using their ATAK-hosted Centurion™ mission system for C2 (Command and Control) of a drone using full symmetric encryption of task and target data secured by Arqit’s symmetric key agreement platform. During the mission, image data of potential targets was encrypted and relayed securely using Arqit’s quantum safe communications tunnel. Additionally, through active authorisation of endpoints and frequent rotation of symmetric keys, the attack surface area was limited and perfect secrecy of the data was achieved.

The combined Arqit and Blue Bear’s quantum safe communication solution is scalable. It can be applied to any data transmission path between Operators, mission systems and crewed/uncrewed vehicles. The solution can be used on any open or closed network in C2 of air, land or sea borne systems and is agnostic of the communication bearers (e.g. point-to-point datalinks, mesh datalinks, 5G, SATCOM, fibre and optical links).

Arqit Founder, Chairman and CEO, David Williams, said: “We are pleased to prove that Arqit is the solution of choice for future proofed protection of highly dynamic assets like swarming drones. The versatility of Arqit’s symmetric key agreement software agent means it can instantly layer into any part of the battlespace network stack with full compatibility and interoperability with existing network infrastructure, protocols and quantum safe encryption algorithms. The promise of Multi Domain Integration can only be met with stronger, simpler encryption.”

Blue Bear CEO, Dr Yoge Patel, said: “Integrating Arqit’s technology onto our Smart Connect™ avionics gives our customers an operational advantage in multi-domain operations and beyond. With authentication on a continuous basis, even if an asset becomes compromised it can be deactivated in real time. This has not been seen before. Our demonstration with Arqit represents a milestone development in the security of crewed and uncrewed applications.”

ENDS



About Arqit

Arqit supplies a unique quantum encryption Platform-as-a-Service which makes the communications links of any networked device secure against current and future forms of attack – even from a quantum computer. Arqit’s product, QuantumCloud™, enables any device to download a lightweight software agent, which can create encryption keys in partnership with any other device. The keys are computationally secure, optionally one-time use and zero trust. QuantumCloud™ can create limitless volumes of keys in limitless group sizes and can regulate the secure entrance and exit of a device in a group. The addressable market for QuantumCloud™ is every connected device.

About Blue Bear

Blue Bear are pioneers of autonomy and unmanned systems; evolving unmanned concepts, regardless of size, at a pace unmatched by other organisations. We deliver efficient solutions, professional services and commercial results, supporting both military and civil markets worldwide, with unmatched pace, agility, passion and innovation. Blue Bear’s track record in innovative research and flight tests has won us several awards and positioned the company at the leading edge of UAS development in the UK and Europe.

Blue Bears Smart Connect™, having been deployed for 5 years, successfully brings different and multiple UAS into highly autonomous collaborative swarms for UK militaries. It is used to scale combat mass in MDO by acting as the gateway to autonomy algorithms through its modular, expandable and platform agnostic architecture.

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