Drone over Cellular

The AGILE Drone over Cellular is a framework for operating remote unmanned vehicle and real-time data transmission. It leverages open-source autopilot software and integrates bonded multi-channel cellular LTE 5G.

# Components

Ground Control Station (GCS)
A fully rugged and portable GCS equipped with its' own LTE gateway, a built-in battery, and ethernet port for easy laptop connection. When powered on, it connects to the nearest cell tower, establishing a stable internet connection for the control/monitor software running on the laptop. This connection allows the GCS to communicate with the drone over long distances, far beyond the range of traditional radio control systems.

Autopilot
Installed on the drone is a sophisticated high-performance autopilot, providing precise control and advanced flight capabilities. It is suitable for any airframe (e.g. multi-rotor, fixed-wing, etc). Its integration with the onboard LTE gateway enables real-time communication and control over long distances.

LTE Communications Kit
The onboard LTE commskit facilitates seamless communication between the drone and the GCS over a secure tunnel. This tunnel is crucial for establishing a direct and secure communication link, ensuring both the drone and GCS can see and interact with each other instantly once connected to LTE.
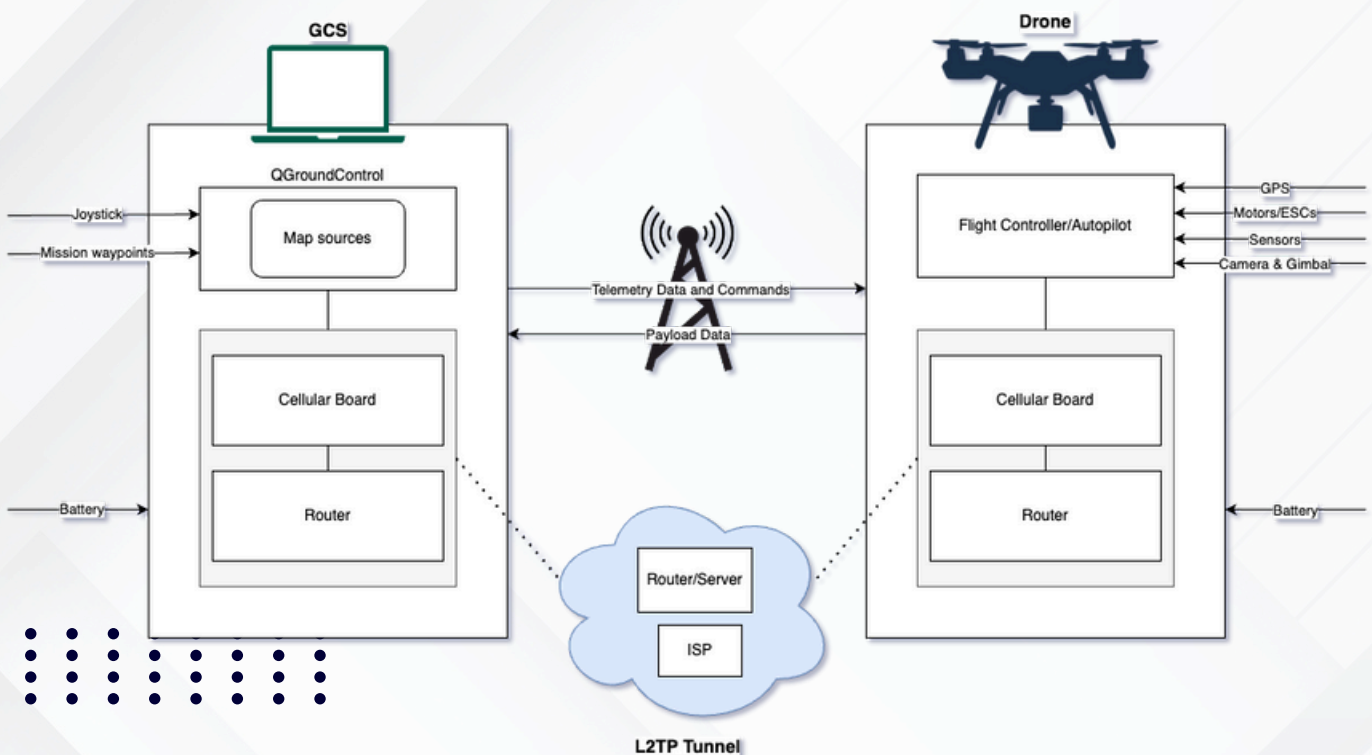
Features

Operational Resilience
Equipped with failover mechanisms and return-to-home presets, the system ensures that the drone can safely return to its base in case of connectivity issues or emergencies. The secure tunnel between the GCS and drone provides a stable communication link, enabling reliable control for challenging environments or for critical missions.

Flexible Chassis & Payload Options
The system's components are adaptable to various chassis configurations, whether multi-rotor or fixed-wing and payload options. This flexibility allows users to choose the best platform for their specific mission requirements. The modular design ensures that the system can be easily integrated, providing versatility and scalability for diverse applications. For example, we can achieve longer airborne loiter time by dedicating more payload capacity to additional batteries.

Secure LTE Connectivity & Extended Operational Range
Leveraging LTE connectivity, the drone system can operate over extended ranges, far beyond the limitations of traditional radio control systems. The integration of LTE gateways and establishment of a secure tunnel between the drone and GCS ensures robust and uninterrupted connectivity. This system supports multicast, allowing multiple ground control stations or operators to receive real-time data streams simultaneously.

Multicast Communication
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User-Friendly
The GCS, housed in a durable Pelican case, includes an Ethernet port for easy laptop connection. Install a single user-friendly application for operators to monitor and control the drone.

Drone may fly any distance, on any cellular network away from the ground control station

Cell Tower

Drone can collect and send back real-time video, data and sensor information

5G

Cell Tower

About AGILE

US Headquartered and a global innovator, AGILE is a qualified small business that has the highest levels of capability, security of communications, interoperability, upgradeable and ruggedized to withstand ongoing use to adapt in all environments to rapidly advancing communications technology.

AGILE offers the broadest range of voice, messaging, and data on 4G and 5G solutions in state-of-the-art encryption in the industry. Our solutions are built to include training and flexibility so that operators can maintain focus on their job without concern of equipment functionality. Our expertise is in mobile, LTE, interop solutions with a focus on untrusted networks. Proven experience for more than a decade, highlighting the American design for software and hardware cellular devices to conquer the most rugged and complex applications.