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AeroGCS DEFENCE

For Bharat, By Bharat, Securing the Nation's Skies

● Introducing AeroGCS Defence

Marching toward Atmanirbharat in defence technology, PDRL one of India's most trusted DroneTech innovators, proudly introduces AeroGCS Defence: a mission-ready drone software platform built to protect Bharat's skies, empower our armed forces, and safeguard our borders. More than just a Ground Control Station (GCS), AeroGCS Defence is a strategic digital shield for Bharat.

● Advance Features



- **Firmware Signing**

Digitally signs drone firmware to prevent tampering and cyber-injection attacks.



- **Encrypted Communication**

All drone GCS communications are secured, eliminating man-in-the-middle attack risks.



- **Data Encryption**

All mission files and maps are secured using AES encryption one of the most trusted standards in defence. Each user gets a unique, password-protected key ensuring file access is restricted and secure.



- **Offline Mission Capability**

Execute mission planning seamlessly without the need for an internet connection. With support for pre-downloaded maps and advanced GIS formats including .tiff raster maps and vector shapefiles.





- **Target Location Identification**

Enables operators to mark and manage points of interest with precision and ease. By simply clicking on the live video feed, users can interactively mark targets, with the system automatically calculating the latitude and longitude and placing a corresponding marker on the mission map.



- **Precision Object Drop System**

AeroGCS Defence is equipped with an intelligent object drop system engineered for mission-critical logistics and tactical operations. This enables drones to deliver essential payloads to precise GPS coordinates, even in remote or high-risk zones.



- **Object Tracking in Live Video Feed**

Enhance surveillance and monitoring with intelligent real-time object tracking. Users can define a Region of Interest (ROI) by drawing a rectangle around an object directly on the live video feed. Once selected, the system automatically tracks the object's movement



- **Red Zone Aware**

AeroGCS Defence is equipped with Red Zone Aware capability, allowing the system to recognize and respect restricted or no-fly zones during mission planning and execution. By integrating airspace restrictions directly into the mission workflow, it ensures drones avoid unauthorized or hazardous areas enhancing safety, regulatory compliance, and operational reliability.

● Top reasons Why Choose AeroGCS Defence?



- **Made in India, ensuring full software control and enhanced system security.**

Since the software is fully developed and maintained in India, complete control over the source code is ensured. This eliminates foreign dependencies and minimizes risks of hidden vulnerabilities or backdoors, thereby guaranteeing stronger system security.



- **Digitally signed software prevents any tampering with the binary or flight.**

The flight controller binary is digitally signed, making it tamper-proof. This ensures that unauthorized modifications are impossible, preventing any compromise to the drone's flight integrity and mission reliability.



- **Encrypted drone-GCS communication eliminates man-in-the-middle risks.**

All data transmitted between the drone and the Ground Control Station (GCS) is encrypted, effectively preventing "man-in-the-middle" attacks. This ensures that no external entity can intercept or manipulate mission-critical communications.



- **Encrypted flight logs accessible only via AeroGCS Config ensure data security.**

Flight logs are stored in encrypted form and can only be accessed using the authorized AeroGCS Config software. This provides superior data security and prevents misuse of flight history by unauthorized personnel.



- **Drone-captured images and videos can be encrypted to block unauthorized access.**

All imagery and video data generated during missions can be encrypted, ensuring that sensitive reconnaissance data cannot be accessed or misused by unknown or hostile entities.



- **Custom flight controller software offers enhanced security and performance.**

The software can be tailored to specific defence applications, providing both enhanced security and optimized high-performance operations for diverse mission needs.



- **Local Indian team provides support for custom requirements.**

With a dedicated Indian development team, AeroGCS Defence ensures faster customization, immediate support, and adaptability to evolving defence requirements, without external dependencies.



- **Stronger ecosystem with Made-in-India flight controller and navigation device.**

AeroGCS Defence is bundled with a Made-in-India flight controller and NavIC-based navigation device, creating a secure, indigenous, and self-reliant defence ecosystem.



- **Defence-specific features include target location Identification, payload drop, and object tracking.**

The platform supports advanced mission functions such as target location identification, payload delivery, object tracking, and other defence-specific operational capabilities.



- **Red-zone awareness prevents operations over critical military installations.**

The system incorporates awareness of red zones and restricted areas around critical military installations, ensuring that drones cannot be misused against national security assets.



- **Six years of system maturity with over 3 million AeroGCS flight hours.**

With over 6 years of continuous development and more than 3 million (30 lakh+) successful drone flights, AeroGCS Defence is a mature, battle-tested platform with proven reliability.

● Comparison Chart: AeroGCS Defence vs Others



Feature	AeroGCS Defence	Mission Planner	QGCS
Logs & Data Encryption & Decryption	AES-based encryption for secure file storage and retrieval; unique password-protected user keys; mission files/maps encrypted on write and decrypted on read.	Open-source; not enterprise-cloud oriented.	Open-source; not enterprise-cloud oriented.
Offline Mission Capability	Supports offline/pre-downloaded map tiles.	Supports offline/pre-downloaded map tiles.	Supports offline/pre-downloaded map tiles.
Support for .Tiff and Shape File (Offline)	Supports .tiff and shape files; supports raster and vector maps.	Not supported.	Supports .tiff and shape files.
Communication Encryption	Works exclusively with secure Ag++ Flight Controller.	Does not support Ag++.	Does not support Ag++.
Precision Object Drop System	Intelligent payload drop system for mission-critical operations; precise GPS-based delivery.	Not supported.	Partially supported; requires custom configuration.
Object Tracking in Live Video Feed	ROI-based real-time tracking; automatic frame analysis; ideal for surveillance and target following.	Not supported.	Not supported.
No-Fly & Caution Zone Enforcement	Red (No-Fly) & Yellow (Caution) zones; automatic RTL trigger; real-time alerts.	Not supported.	Not supported.
Video Playback & Image Review per Mission	Mission logs linked with video/image data for accurate flight-media mapping.	Not supported.	Not supported.
User Access Control	Role-based access; audit logging for compliance.	Not supported.	Not supported.
Live Video Feed Support	Supported.	Supported.	Supported.
Target Location Identification	Interactive marking on live feed; shows GPS coordinates & distance; multi-target support.	Not supported.	Not supported.
Map Management System	Advanced Map Manager; supports vector/raster maps, .tiff integration, custom layers, and hierarchical storage.	Not supported.	Not supported.
Seamless Mission Planning & Execution	Single-screen planning and execution; no switching needed.	Requires switching screens.	Requires switching screens.
Ag++ Configuration	Uses dedicated Ag++ CONFIG tool for setup; Defence version with essential configurations.	All settings in one software.	All settings in one software.
Local Mission Storage & Replay	Stores flown missions locally; allows reopening, editing, and re-flying.	Missions not stored locally.	Missions not stored locally.

● Best Paired Technologies:

● Defence Flight Controller

The Defence Flight Controller is conceptualized, designed, and manufactured in Nashik; Maharashtra is purpose-built to meet the operational needs of India's defence forces.



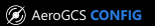
● NavIC Based Navigation

AeroGCS Defence paired with NavIC-based Navigation ensures secure, precise, and India-controlled drone operations for defence and strategic missions.



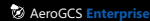
● Drone Configurator

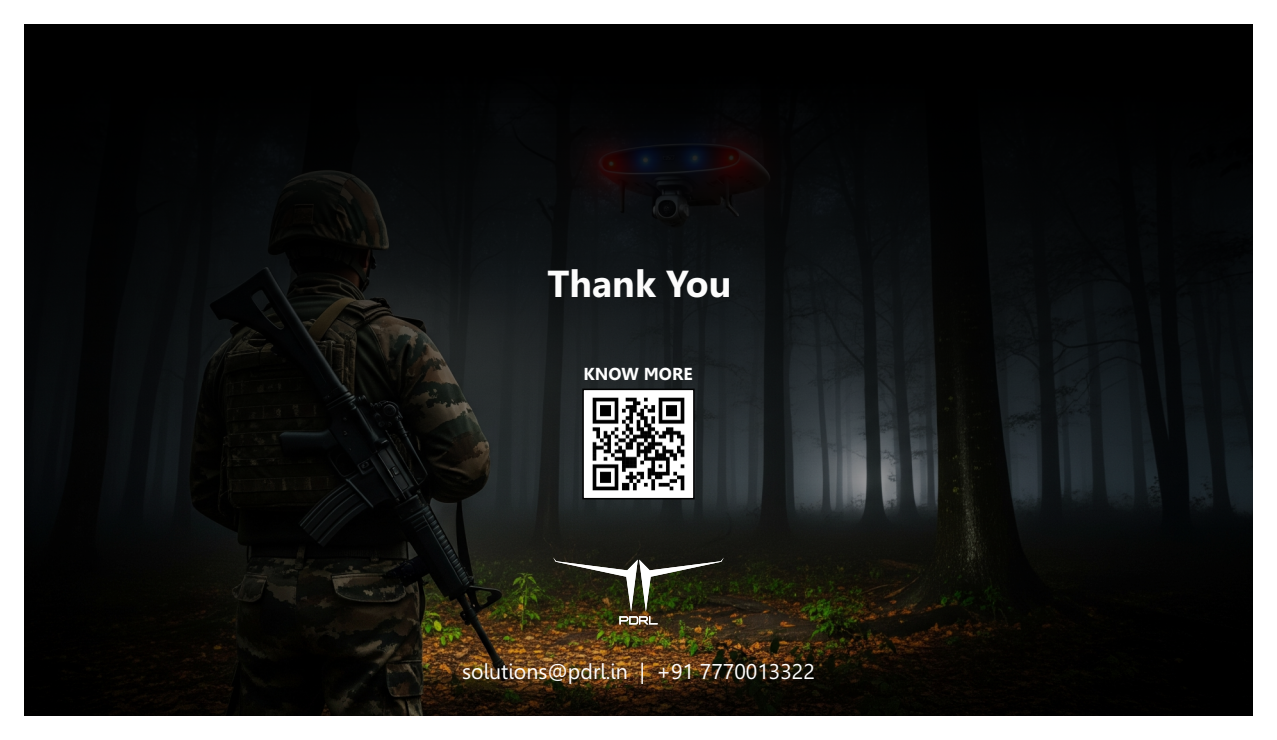
Seamlessly configure your drone and its sub-systems using advanced, industry-preferred software trusted by leading drone manufacturers.



● Command Control Centre Software

Seamlessly manage your entire drone fleet from a unified dashboard, with real-time insights and complete operational control.





Thank You

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solutions@pdrl.in | +91 7770013322