**DRONE PILOT VERIFICATION SYSTEM**

**Project Title**

**Drone Pilot Verification System**  
An automated power transmission and pilot verification module for unmanned aerial systems.

**Introduction**

This project focuses on enhancing the safety and control of drones by ensuring that only verified pilots can operate the drone. The system uses RFID technology, cloud communication, and server integration to achieve secure verification and monitoring of drone pilots.

**Objective**

To develop a secure and automated system that verifies drone pilots using RFID, transmits their real-time location and details to the cloud, and integrates the data with the drone service provider’s server.

**Project Modules**

**1. RFID Encryption and Decryption**

* Developed a unique RFID encryption and decryption algorithm.
* Written in Embedded C.
* Compatible with both Arduino IDE and Visual Studio Code.
* Ensures that only authorized RFID cards can activate the drone.

**2. Pilot Identification and Location Tracking**

* After the RFID card is tapped, the system captures the pilot’s identity and current GPS location.
* An algorithm written in Embedded C and AT commands transmits this data.
* The data is sent to AWS Cloud for secure storage and remote access.

**3. Cloud to Server Integration**

* A Java-based program is used to connect the AWS Cloud with the FX UAV company's server.
* This ensures that all pilot verification and location data is available on the company’s system in real time.

**Technologies Used**

* Embedded C for microcontroller programming and RFID logic
* AT Commands for communication with modules
* Java for server-side integration
* AWS Cloud for data storage and access
* Arduino IDE and Visual Studio Code for development

**Applications**

* Drone fleet management for companies and agencies
* Secure verification for drone pilots
* Real-time monitoring of drone operations
* Useful in military, commercial, and research drone applications

**Conclusion**

This project provides a complete end-to-end solution for drone pilot verification. It ensures secure access, real-time tracking, and seamless integration with company infrastructure, making drone operations more secure and manageable.



