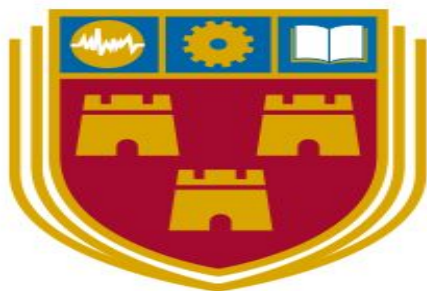




Drone Air Traffic Control System

Software to Coordinate Automated Drones, Safely

Design Manual



INSTITUTE *of*
TECHNOLOGY

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Introduction:

This document contains an overview of the technologies used to create the Drone Air Traffic Control System, along with relevant UML diagrams such as class diagrams and sequence diagrams. This document will also cover the proposed project database schema, along with some proposed mock GUI screens.

Technologies:

Python 3.7:

Python is a high-level, general purpose language that places an emphasis on code readability. It is capable of supporting multiple programming paradigms such as object-oriented, imperative, procedural etc.

pyQt/QML:

A popular Python binding for the Qt C++ GUI framework. PyQt, like Qt, is a cross-platform GUI framework.

pyparrot:

Designed by Dr. Amy McGovern, pyparrot is an interface designed to help children program Parrot drones, specifically the Parrot Mambo FPV, Swing and Parrot Bebop 1 and 2 drones.

mySQL:

An open source relational database management system.

Vim:

A text editor, quite extensible and very friendly to touch typists. Provides syntax highlighting for most different programming languages.

PyTest:

An easy-to-use testing tool for Python. Supports various forms of Python (Jython, CPython etc).

Sphinx:

Sphinx is a Python documentation tool, similar to Doxygen.

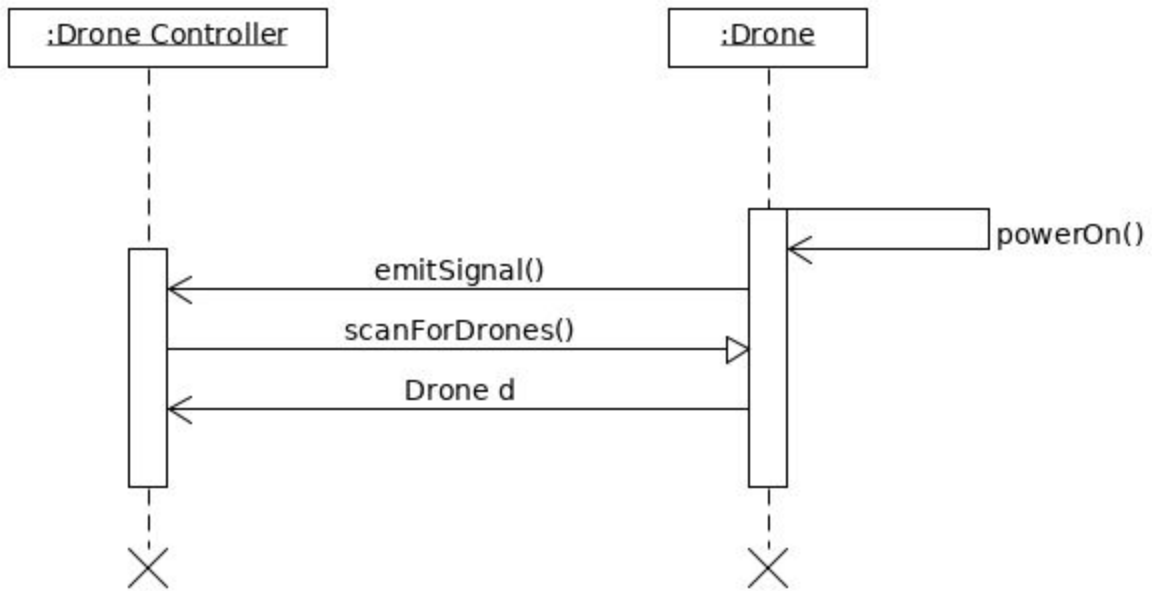
UML Diagrams:

Class Diagram:

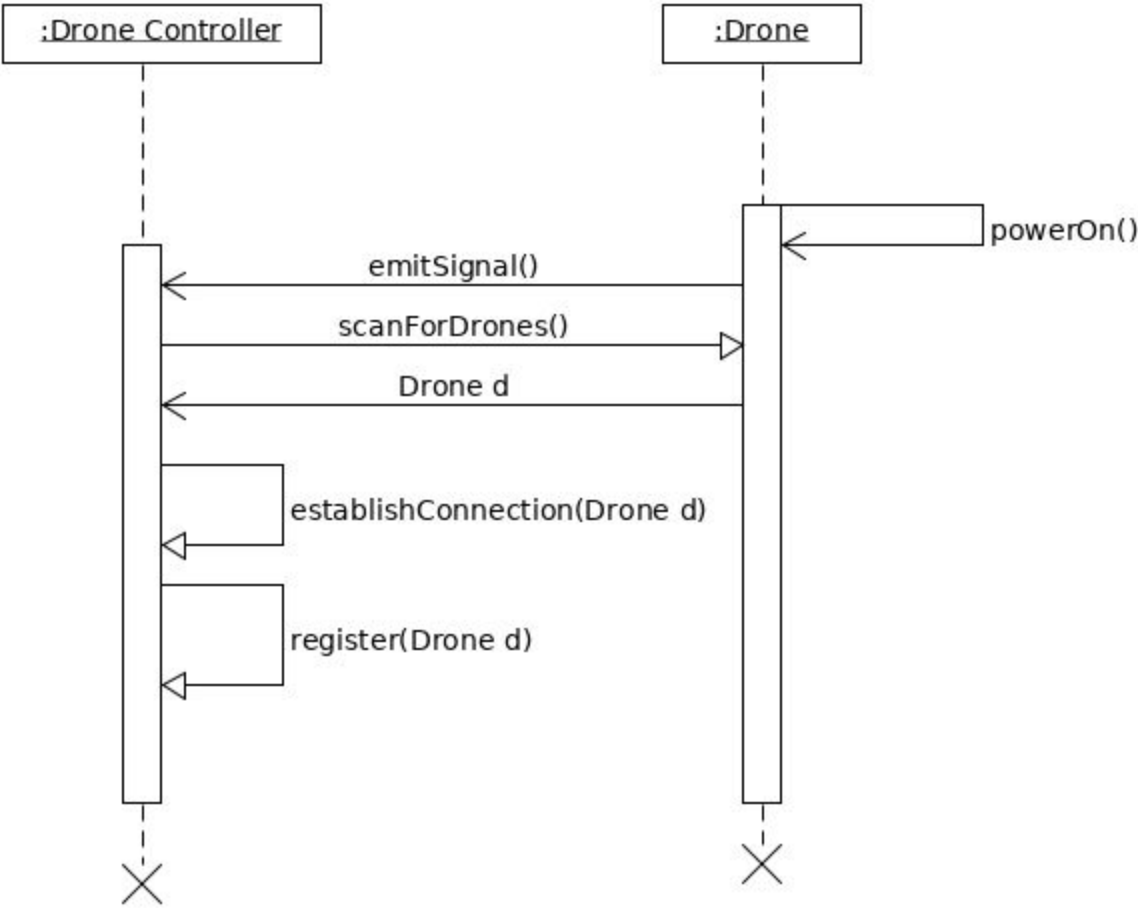


Sequence Diagrams:

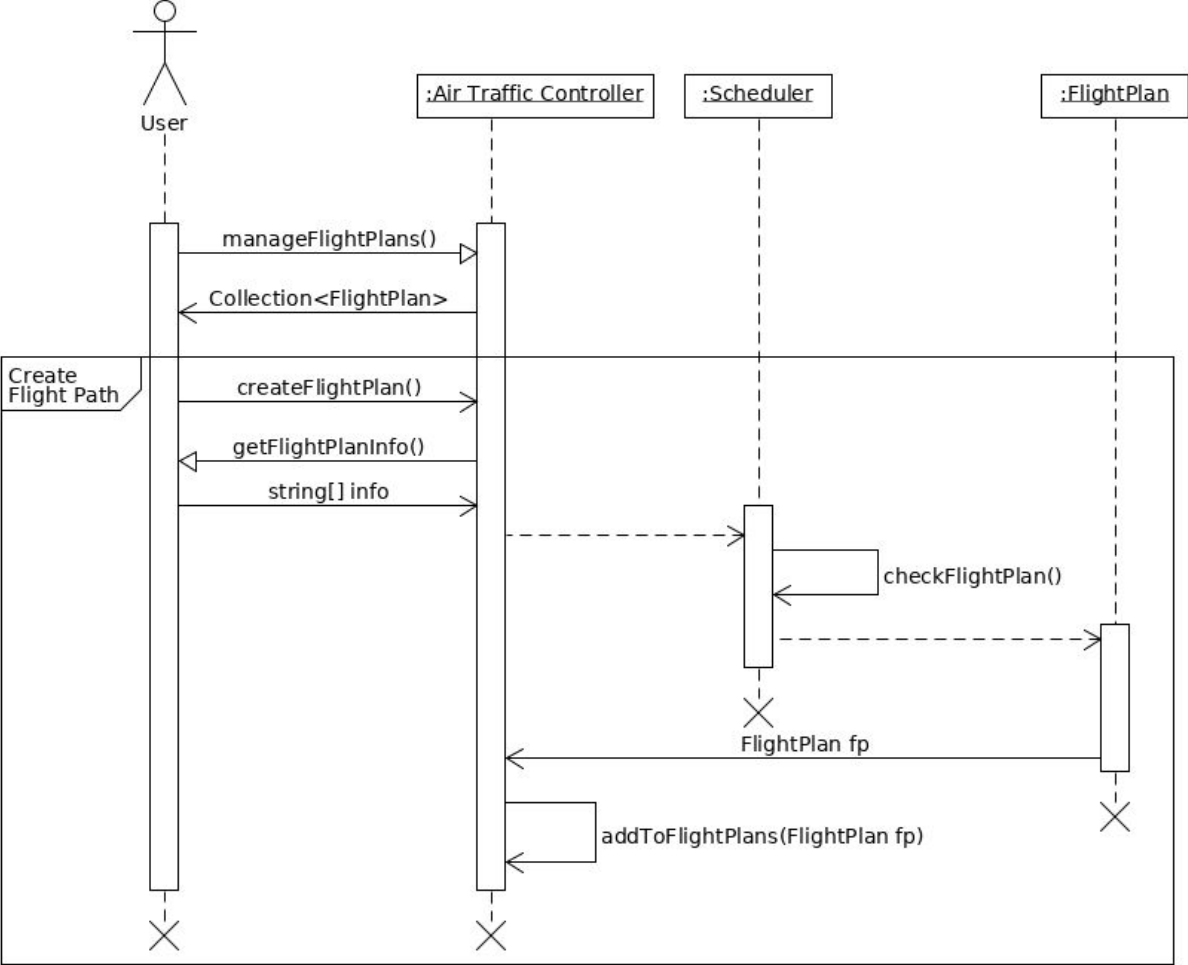
Scan for Drones:



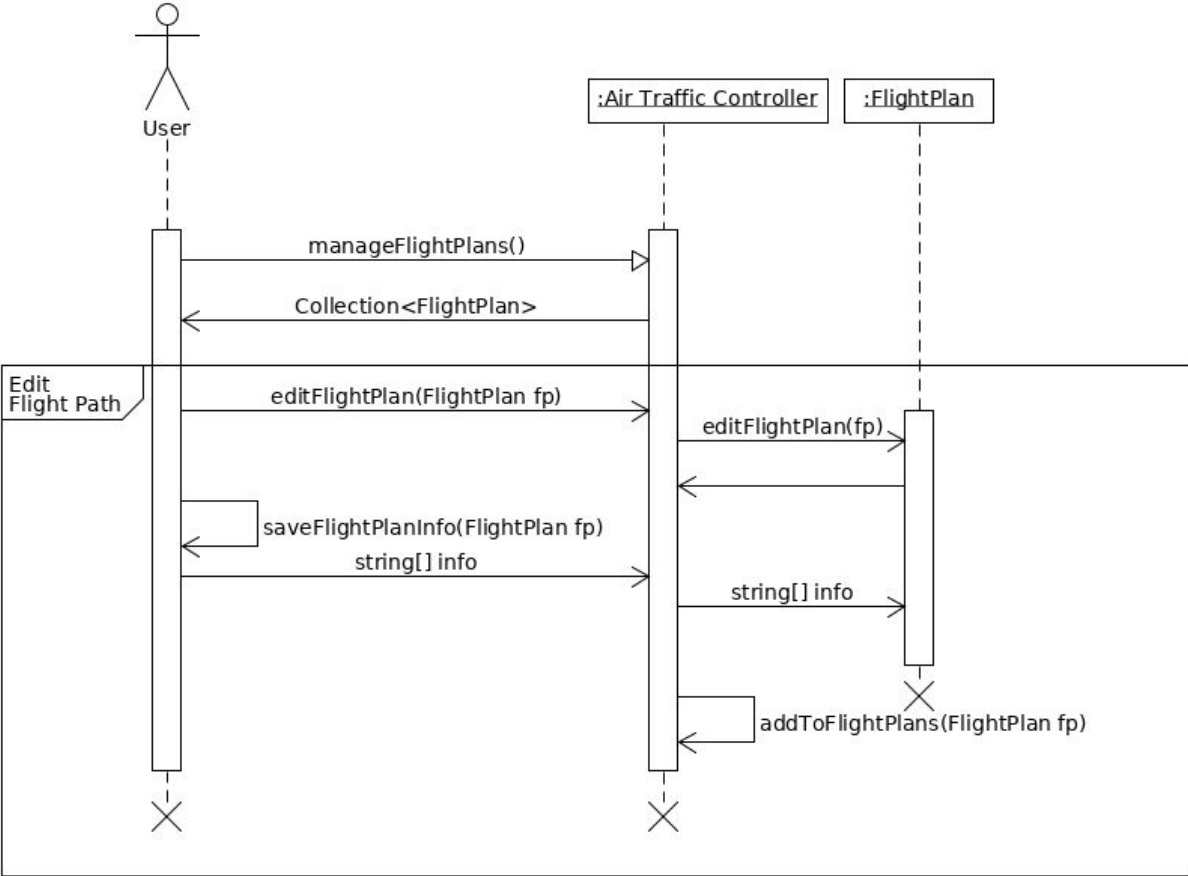
Register Drone:



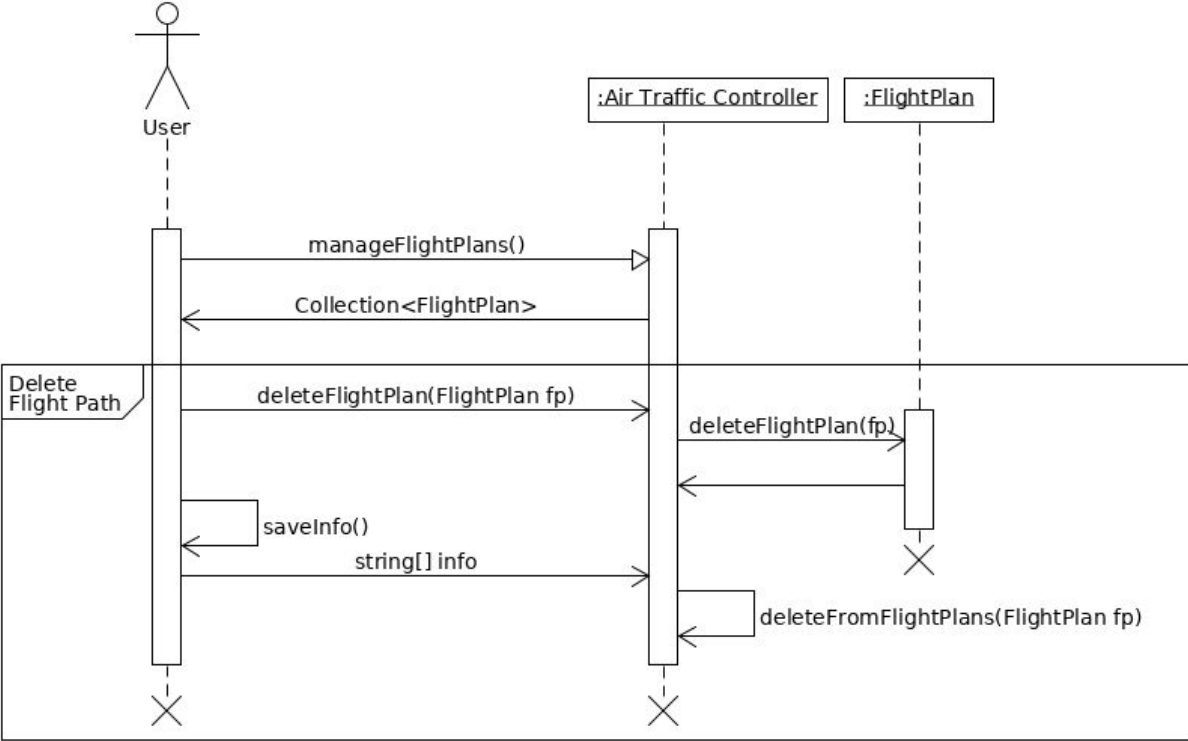
Manage Flight Plans - Create Flight Plan:



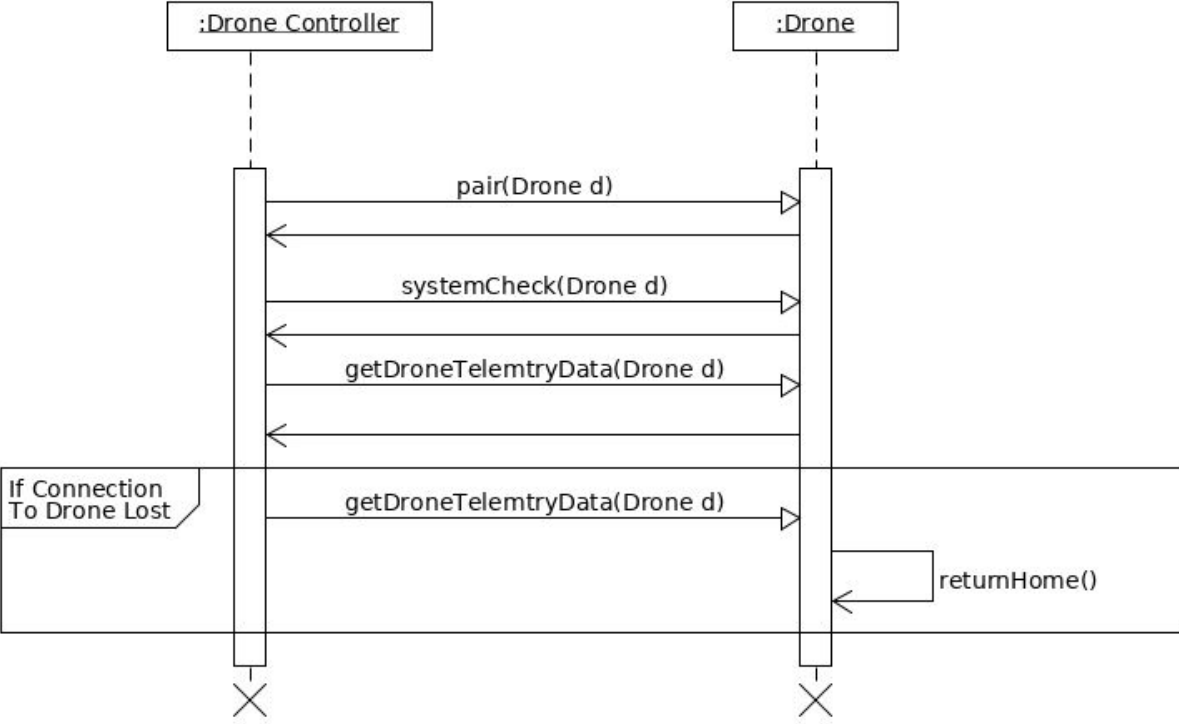
Manage Flight Paths - Edit Flight Paths:



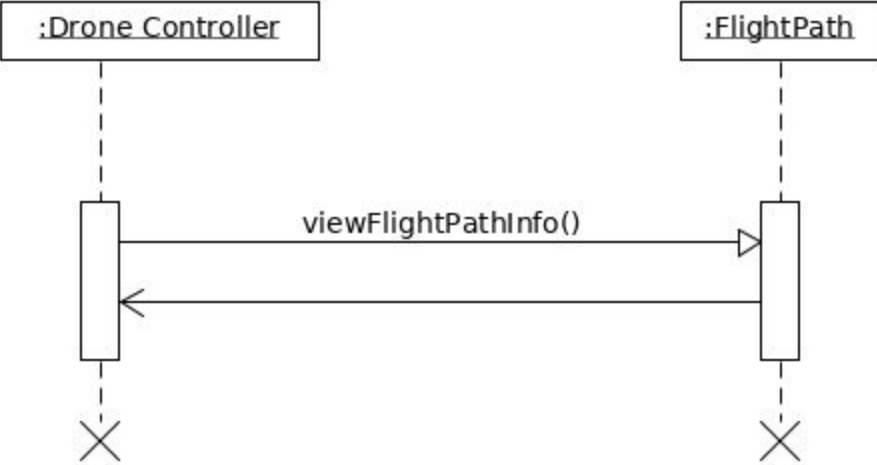
Manage Flight Plans - Delete Flight Plan:



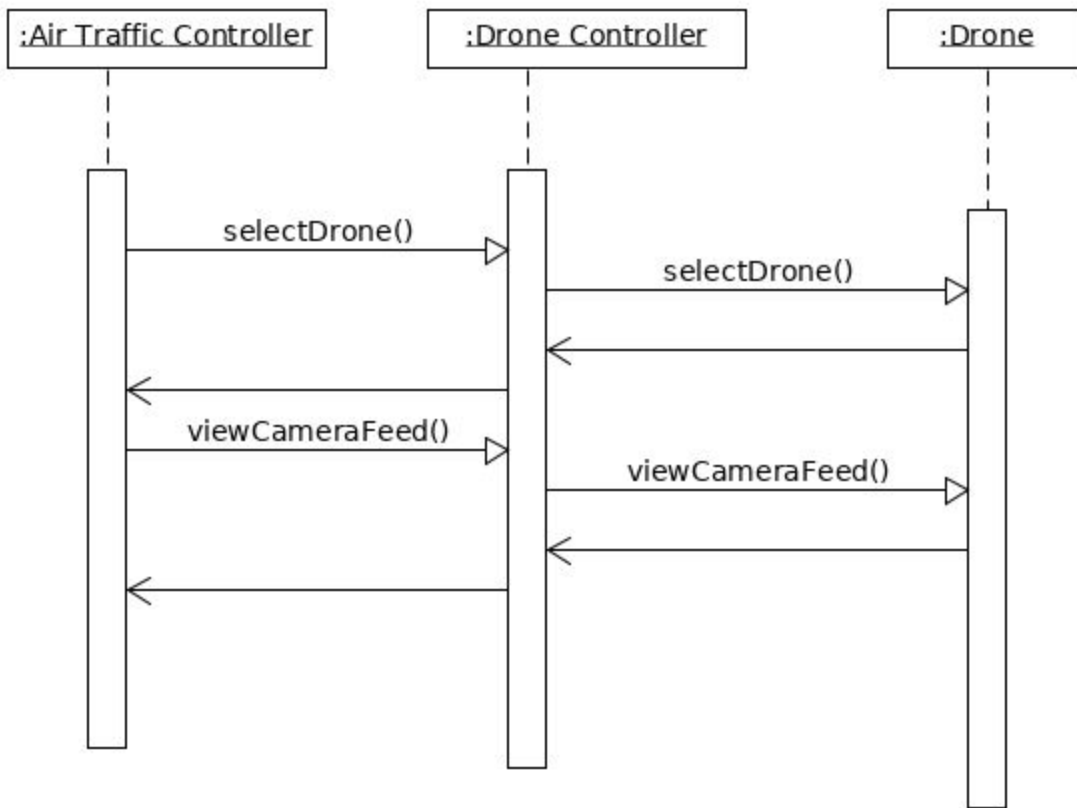
Receive Drone Telemetry Data:



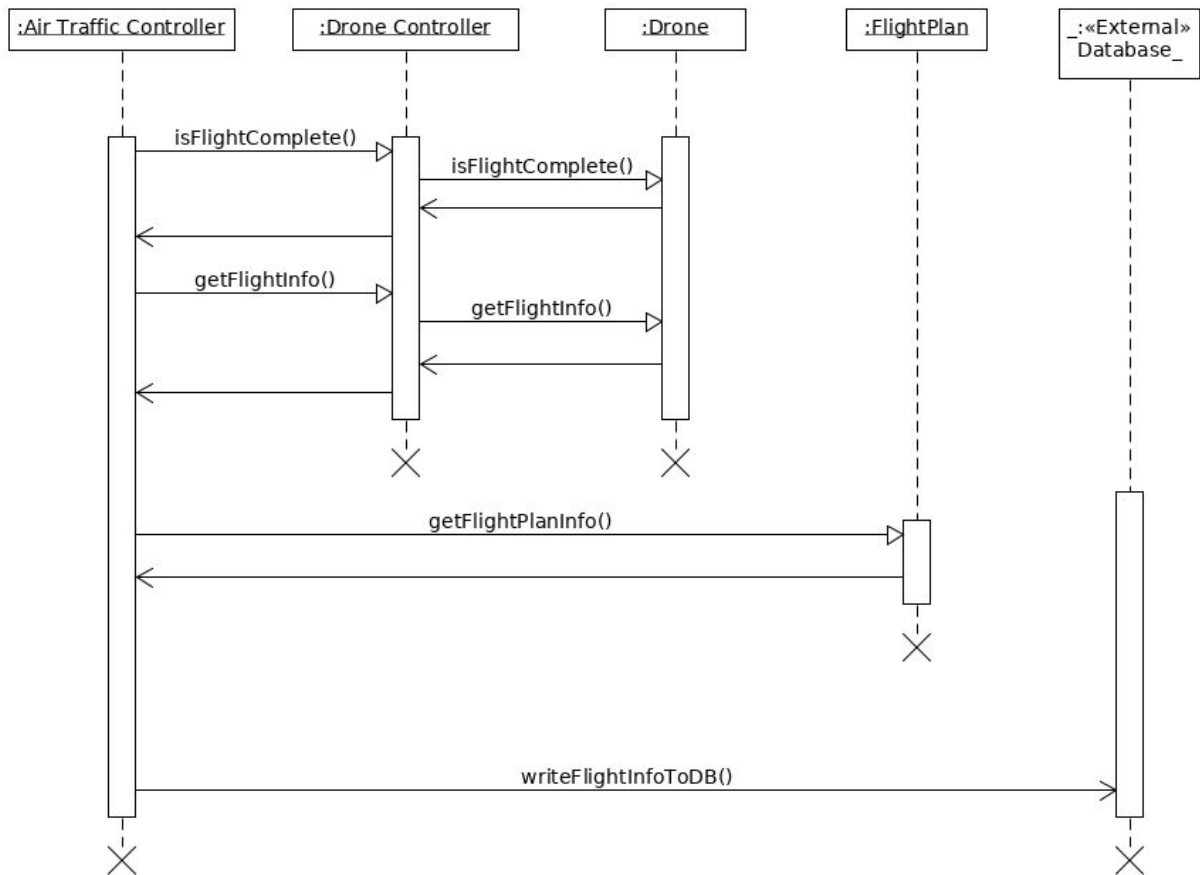
Retrieve Flight Path Information:



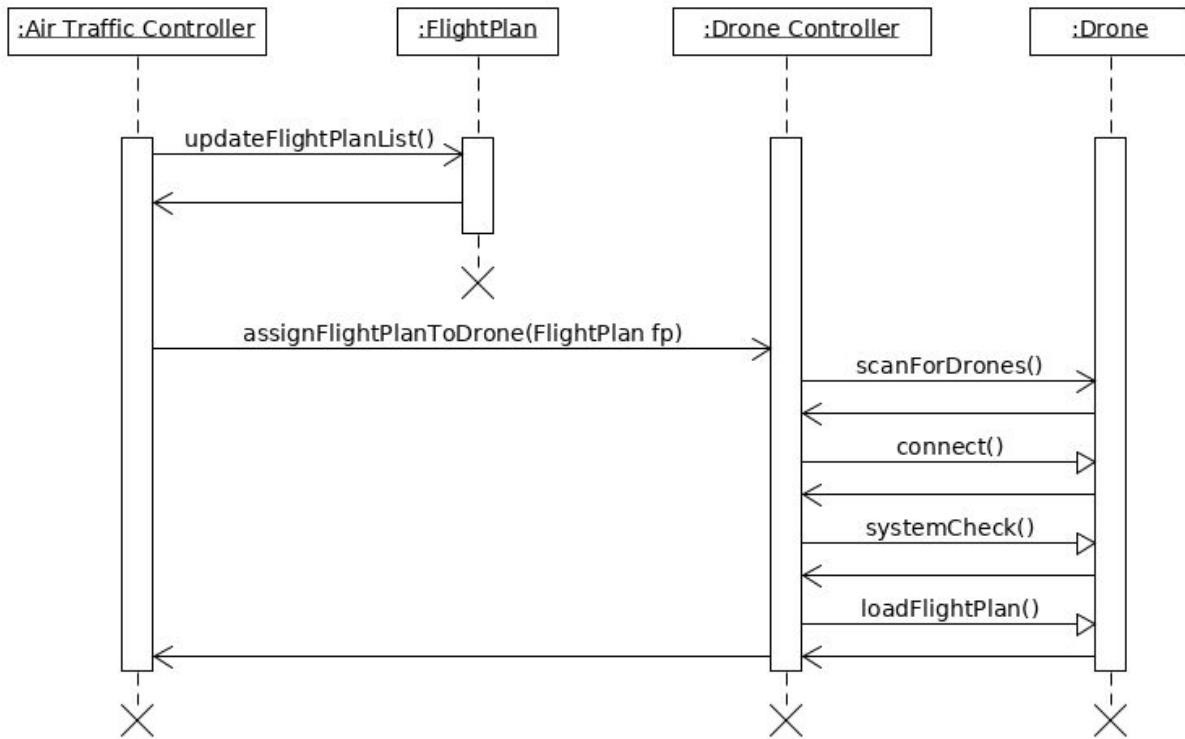
View Drone Camera Feed:



Store Flight Information:



Send Drone Commands:



Database Schema:

ER Diagram:

