UAS Ground Systems

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Objectives

- Provide a user interface for the following functions:
  - Commanding an unmanned aerial vehicle (UAV) on a remote system
  - Displaying data received from the UAV via user-friendly widgets
  - Apply and view computer vision effects on live video feed
- Develop a scalable server to connect many UAVs to many clients
  - Many clients may simultaneously view data from a given UAV
  - However, only one client may control a UAV at a time

UI example - Command Page

UI example - View Page

UI example - Sensors/Health Page

Top-Level Architecture

Qt

Qt Client 1

Qt APIs
QML
User 1

Qt Client 2

Qt APIs
QML
User 2

ROS

Processed image
Camera
Topic
OpenCV
Data
Camera

Sensory data
Temperature
Topic
Temperature
Sensor

Orientation data
Gyro
Topic
Gyro
Sensor

Contained within
Ubuntu