



Internet of Drones

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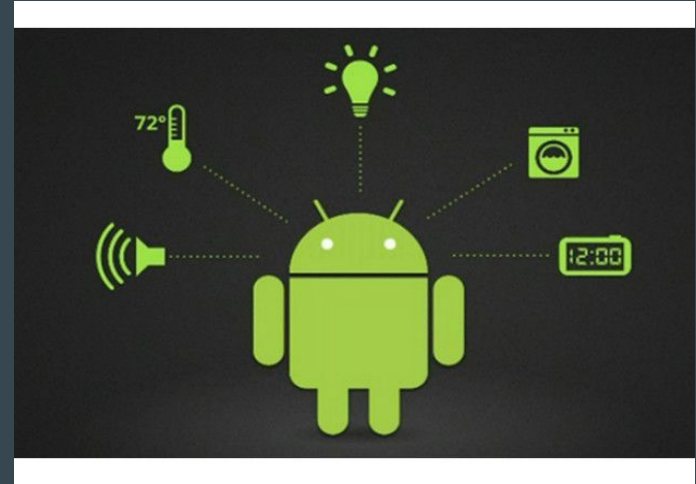


Requirement

- Data acquisition
- Image acquisition
- Long range communication
- Cost effective
- Widely available technology
- User friendly
- Live monitoring of flight
- Portability

Smartphone Platform

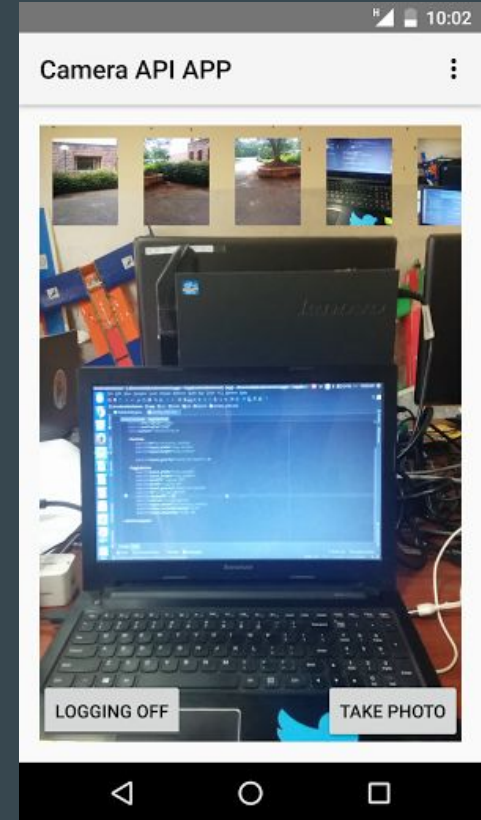
- Universal gadget
- Widely available
- Cost effective
- Multi sensor capability
- High resolution camera
- Simple to integrate
- Computationally powerful
- Hardware independent
- Perpetual
- Upgradability



Solution

Development of an android application to meet the requirements.

- Data acquisition feature for Aerial Mapping
 - Capturing high resolution images from the smartphone camera.
 - Acquiring GPS location and orientation information for the images.
 - Geotag and append camera calibration information to the images.
 - Sensor data logging.
- Communication features
 - Long range communication
 - Live video feed across the globe
 - Autopilot integration
- Computational features
 - Basic image processing techniques



Milestones

- MIT Appinventor was explored, but did not provide the required features
- Ionic framework lacked the hardware accessibility features.
- Android studio provided the best features for the development of android apps and addressed the above problems.
- Sensor data logging, GPS location, timestamp, determine accuracy
- Camera raw image and jpeg image with metadata.



Future Possibilities

- Mobile network signal strength mapping
- Controlling multiple drones through a single smartphone
- Programming waypoints remotely using the application

