Proximity Sensor and Camera for Jets

Status:	Filled
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Operator can get the live feed of the camera to get a better understanding of the plane surroundings.

The sensors alarm the operator about the close objects. The operator can be waned of close by objects by sound and color. The sensitivity and range can be configured by the operator.

Essentially this is the parking tool we have in luxury cars but for expensive jets. In the tour of a FBO facility students will see the the jets and the process of FBOs.

Main Objectives

The main object is to limit number of accidents for FBO, ease parking process and/or boost parking speed. This means lower costs for the FBO in insurance, labor costs and repairs.

You will be given tour in a facility to observe the jets and the process for parking the jets.

Main Deliverables
To achieve the objective mentioned above the following deliverables are needed:

Students should research about the ideal camera and sensor that matches the environment planes are operating at.

Proper documentation for the hardware selection, hardware design and software architecture.

UI Component:

A tablet with a UI that shows camera feeds and proximity diagram to illustrate and warn the object in the configured range.
Users should be able to set the sensitivity and alarm mechanism when an object in near by.
Alarm sound should be triggered when an object is in a configured range
Based on the proximity of the object, different colors are shown to the operator.
Communication module to receive the camera feed and sensor data wirelessly.
Rechargeable battery so that can power up the User Interface. (This can be a simple tablet)

Sensor Component: Wing Tips

The wing tips might need to have 2 cameras to cover front and back views.
3d proximity sensor that scans the environment and measure the distance of the objects
Communication module to send the camera feed and sensor data to UI Component wirelessly.
Rechargeable battery so that can power up the cameras and sensors
Mechanical hook that attaches to and deattaches from the body of jet

Sensor Component: Tail

The tail only needs one camera.

3d proximity sensor that scans the environment and measure the distance of the objects
Communication module to send the camera feed and sensor data to UI Component wirelessly.
Rechargeable battery so that can power up the cameras and sensors
Mechanical hook that attaches to and deattaches from the body of jet

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