Robotic Fuselage Inspection for Dents and Scratches

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Objective

- Before a fuselage is painted it needs to be inspected for dents and scratches. This is 100% manual today.
- We need to investigate a Vision/Laser system if it is on the market or develop a new one to be able to and capture and identify images of any surface defamation.
- Additionally, investigate how a vision system detects defamation on the surface of a fuselage skin.

Approach

- Research on vision/laser technology related to fuselage inspection
- Development of hardware/software prototype
- Development of machine vision system for automated image classification
- Consideration of various operational constraints such as lighting and processing power

Key Milestones

• System Requirements	01/23
• Design and initial hardware prototype	03/23
• Development of machine vision system	04/23
• Integration, testing of final working prototype	05/23

Team Skills

- Structures, aerodyanmics
- Sensors and circuits
- Machine learning
- Robotics, controls
- Coding - Python, C++

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