

Aircraft Damage Alert System



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OPERATIONAL CONTEXT



Aircraft damage refers to deformation, scratches or structural alterations caused by physical impacts on the wings, body and other external surfaces.

Such minor damage may result from interactions with ground handling equipment, baggage loading and unloading operations, apron vehicle movements, or external environmental factors encountered in flight.

Therefore, aircraft exterior surfaces are routinely inspected throughout operations.



How Is Aircraft Damage Detection Performed?

Aircraft damage detection is carried out regularly as a natural part of the operational process. Aircraft exterior surfaces are continuously monitored through routine pre-flight and post-flight inspections, observations during ground operations, and technical assessments by maintenance teams.

- 1. Pre-Flight Inspection:** The authorized personnel performs a visual check of the aircraft's exterior surfaces.
- 2. Turnaround Observation:** Ground handling team observe the aircraft surface while working around the aircraft.
- 3. Post-Flight Inspection:** After flight completion, any conditions that may have occurred during operations are checked again.
- 4. Maintenance Team Assessment:** When required, technical teams carry out a more detailed inspection.
- 5. Recording and Reporting Process:** Identified findings are entered into relevant systems or maintenance records for traceability and follow-up.

How Might We Canvas

Who?

who are the stakeholders that get effected?

IOCC, Flight Crews, Planning Teams, Ground Handling Teams, Technical Teams.

What?

what is the problem that needs to be solved?

Failure to detect aircraft surface damage in a timely and accurate manner due to various causes (FOD, ground vehicle impact, etc.).

Why?

why is this problem worth solving?

This situation leads to safety risks, operational disruptions, and increased costs.

How?

how can this problem be eliminated?

Solutions can be developed to detect existing and potential damage at an early stage during apron operations, support human inspection and make the process safer.

Challenge:

How might we detect early-stage damage on aircraft caused by FOD, ground vehicle impacts to improve operational safety and reduce disruptions?