Aircraft Connectivity and Digital Services

AEEC General session

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Introduction

Airbus has decided to provide new added value services to airlines through the extended use of aircraft data.

This data is hosted on a big data platform coined Skywise, and relies on a new architecture, making it possible to:

- Capture more data
- Improve the aircraft communication capacity
- Provide a host of applications and services

skywise.

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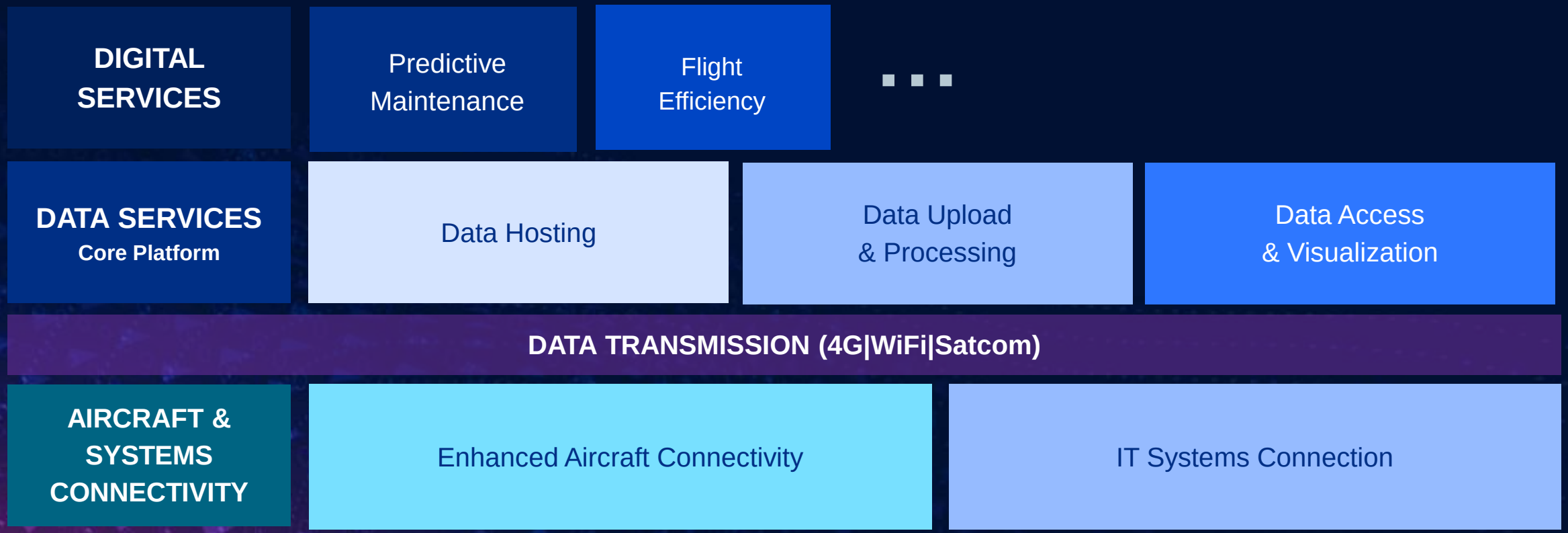
Cross-domain services from the aircraft to the end-user



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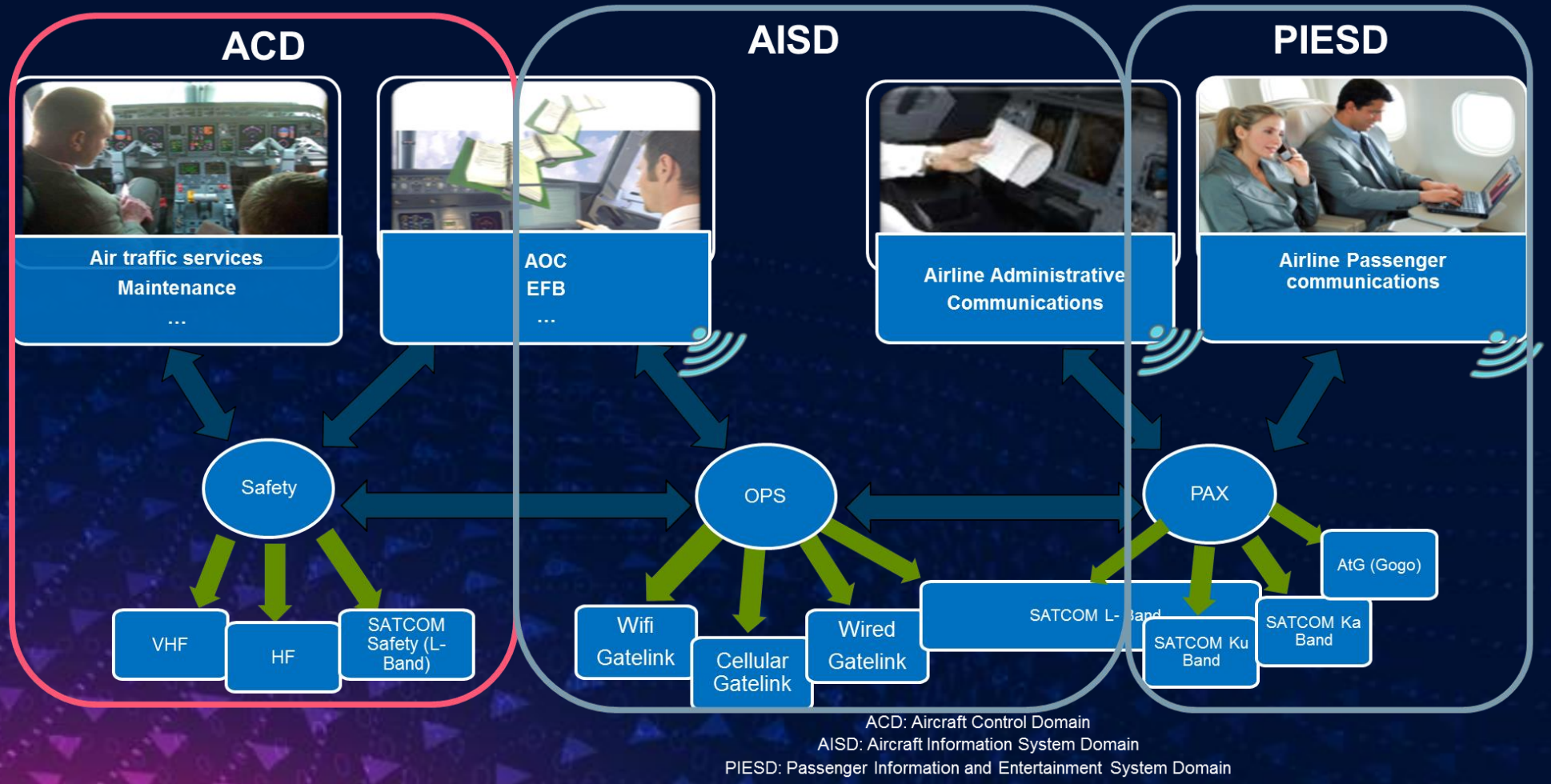
Aircraft connectivity

Aircraft connectivity



ACD: Aircraft Control Domain
AISD: Aircraft Information System Domain
PIESD: Passenger Information and Entertainment System Domain

Flexible and evolutive architecture to cope with

- **Various A/C configuration**
- **Communication needs**
- **Air ground conditions**
- **Technology evolutions**

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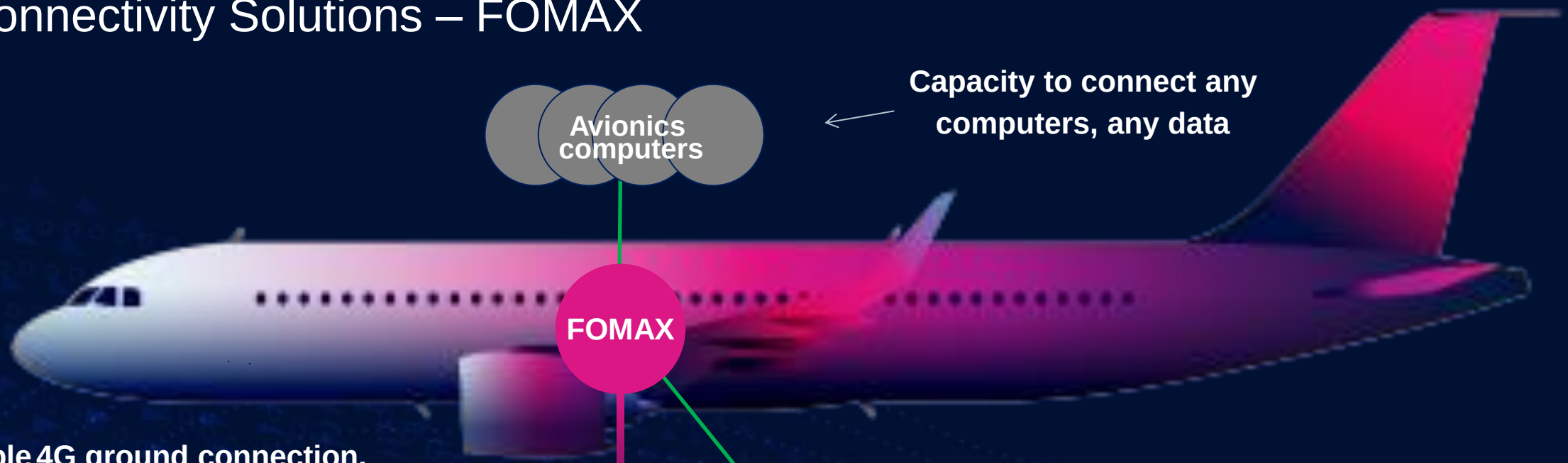
Connectivity Solutions – FOMAX



Avionics computers

Capacity to connect any computers, any data

FOMAX

Double 4G ground connection, inluding a dedicated channel for Skywise offer

4G extended data

4G QAR/DAR/SAR reports/EFB/FLS

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Airline IT

Airline users (OCC, MCC, engineering…)

FOMAX: Flight Operations Message eXchanger
QAR: Quick Access Recorder
DAR: Direct Access Recorder
SAR: Smart ACMS Report
FLS: Field Loadable Software

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Connectivity solutions – FOMAX

400 parameters:
<2% available data

CONNECTED AIRCRAFT
24,000 parameters*
100% available data

*From 1400 to 40 000 for A330

A new dimension in data and connectivity access
An integrated & secured data pathway from the aircraft to skywise.

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Examples of digital services

skywise.

Digital services – IDLE Factor Optimizer

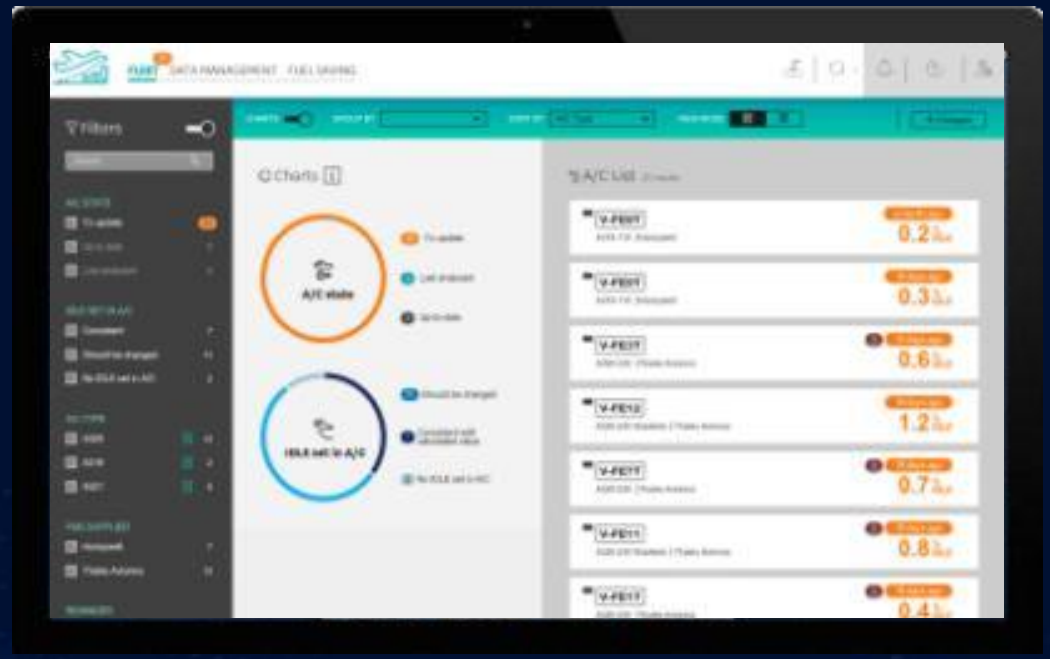
TAIL-CENTRIC FLIGHT PLAN OPTIMIZATION

Adjust FMS flight plan Computations to real aircraft performance

Consider in-time evolution

Get fuel savings on descent and approach phases

Up to* 70kg for A320
100kg for A350
150kg for A330
210kg for A380



The first tail-centric application part of the OPTIMIZE module of **ANALYTICS** BY NAVBLUE

NAVBLUE
AN AIRBUS COMPANY

*per aircraft per flight

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Digital services – Predictive Maintenance

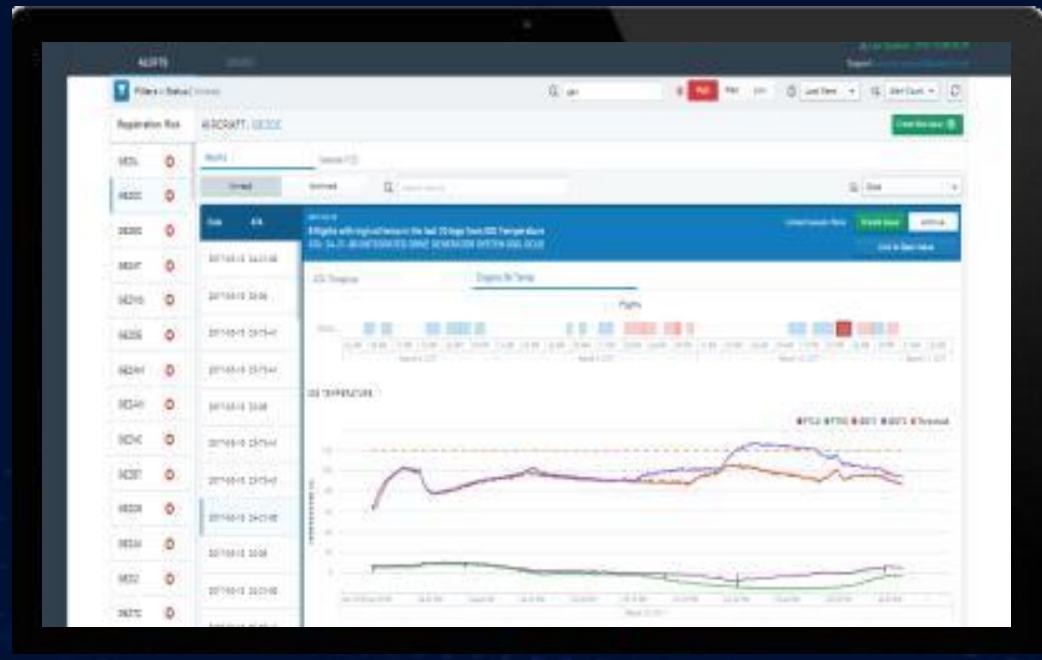
FAILURES ANTICIPATION

Explore unequalled amounts of aircraft data

Use performant analytics to anticipate failures of parts and servicing activities

Reduce significantly operational interruptions

Up to 30% of OI* reduction in A320 and A330 fleets



Field proven experience with a dozen flagship operators

*Operational Interruption

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Digital services – Predictive Maintenance

Event !

Landing

Next dispatch

Delay, AOG…

PREDICT | **DIAGNOSE** | **FIX**

- Estimate when a system will fail
- Estimate why a system will fail

- Be aware a system has failed
- Estimate why a system has failed

- Confirm system failure
- Troubleshoot and fix

Mitigate Risk

- **Avoid event: turn unscheduled event into scheduled maintenance**
- **Anticipate event: prepare to solve event quickly and at lower cost**

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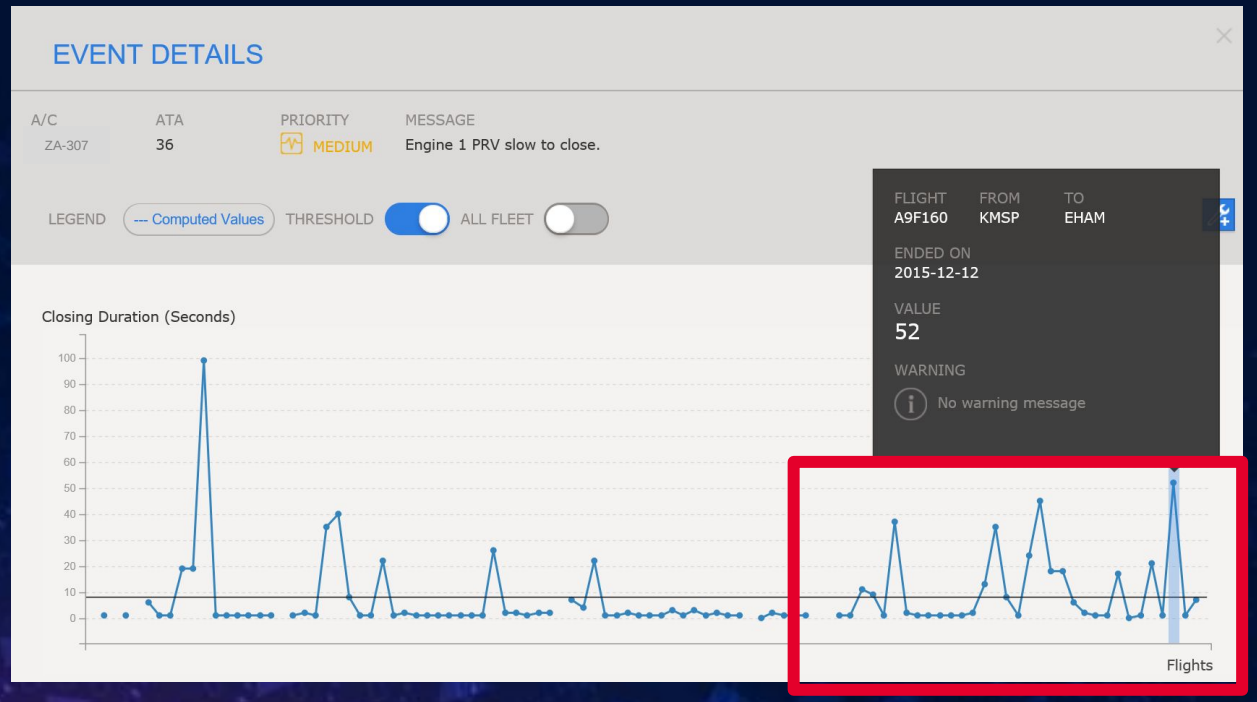
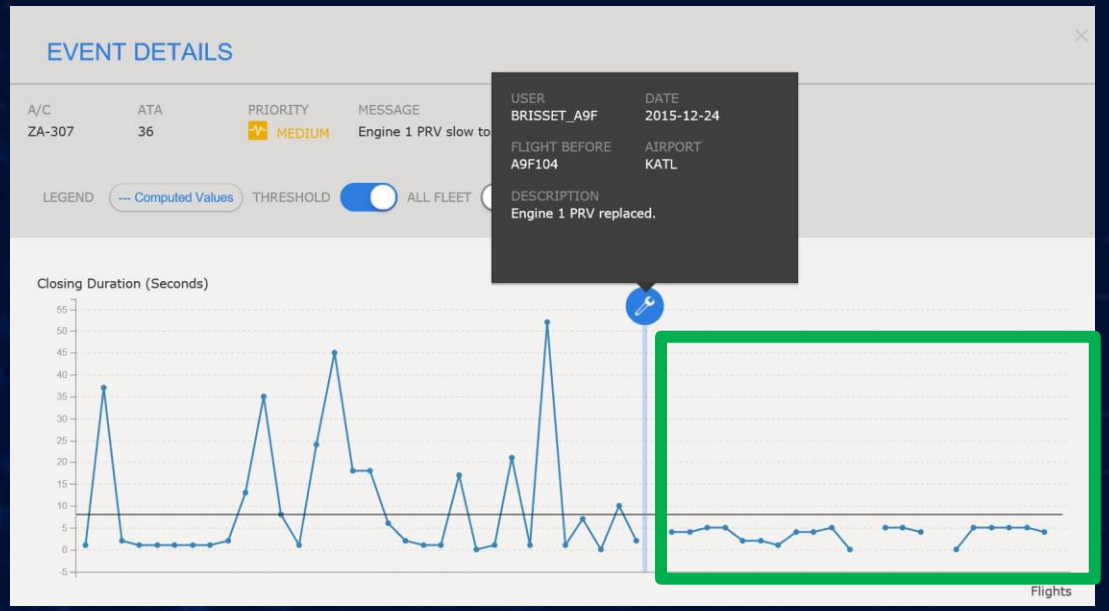
Digital services – Predictive Maintenance

ATA 36 – PRESSURE REGULATING VALVE (PRV) FAILURE



Alert raised to MCC/Engineering because of several occurrences of PRV slow time to close

Engine 1 PRV replaced and behaviour back to normal



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