

# Flight Data for the Enterprise

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GE Aviation, Digital

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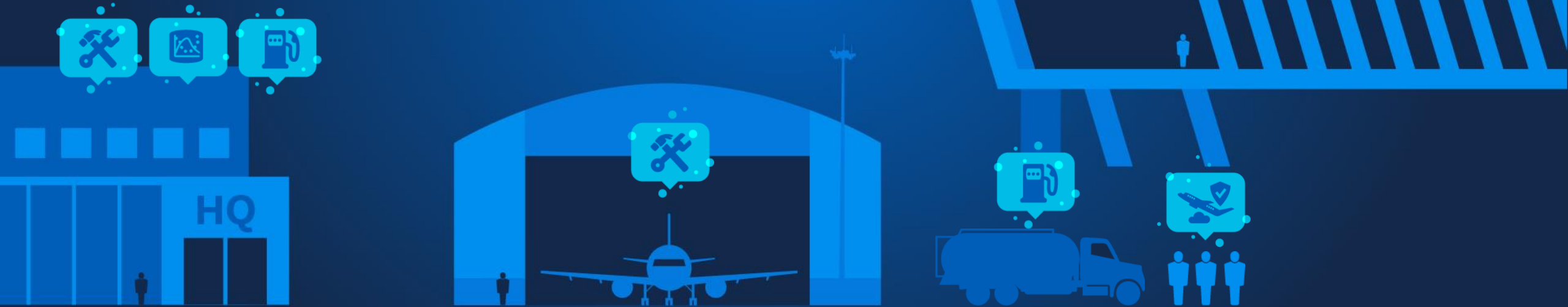
GE Aviation

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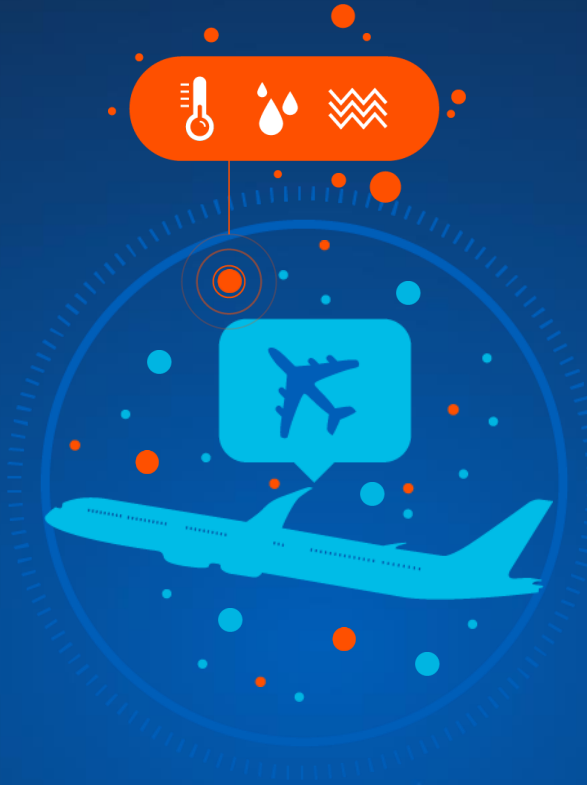
Airlines have many **sources of data** surrounding flight operations.



The **richest data** comes from the airline's fleet of airborne sensors, with hundreds or thousands of data points created every second.



But this data is also the most complex to work with and the most susceptible to **data quality issues.**



# The Challenge

There are many sources of complex data and **hundreds of thousands of data points** created every second...



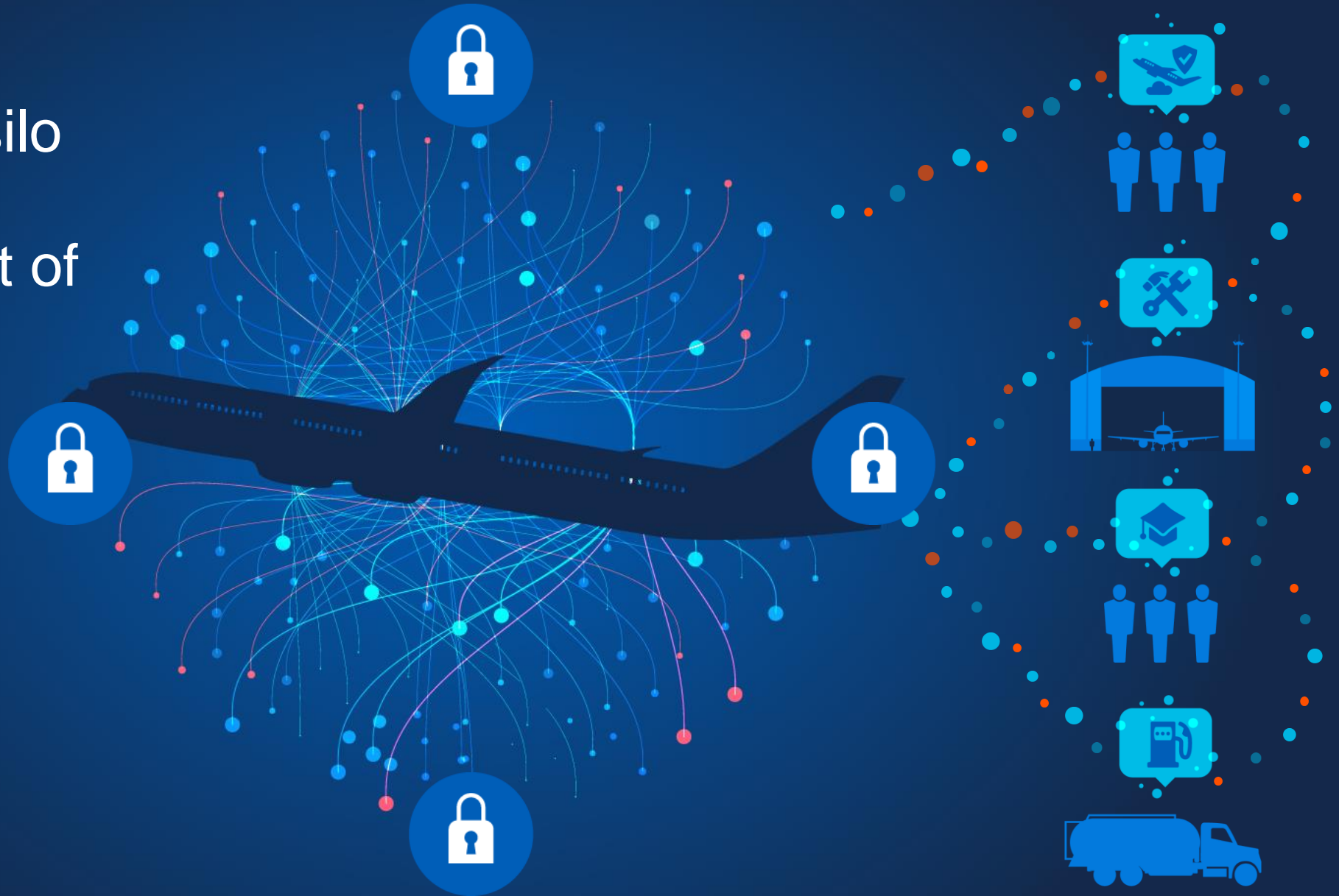
...ALL susceptible to **data quality issues.**



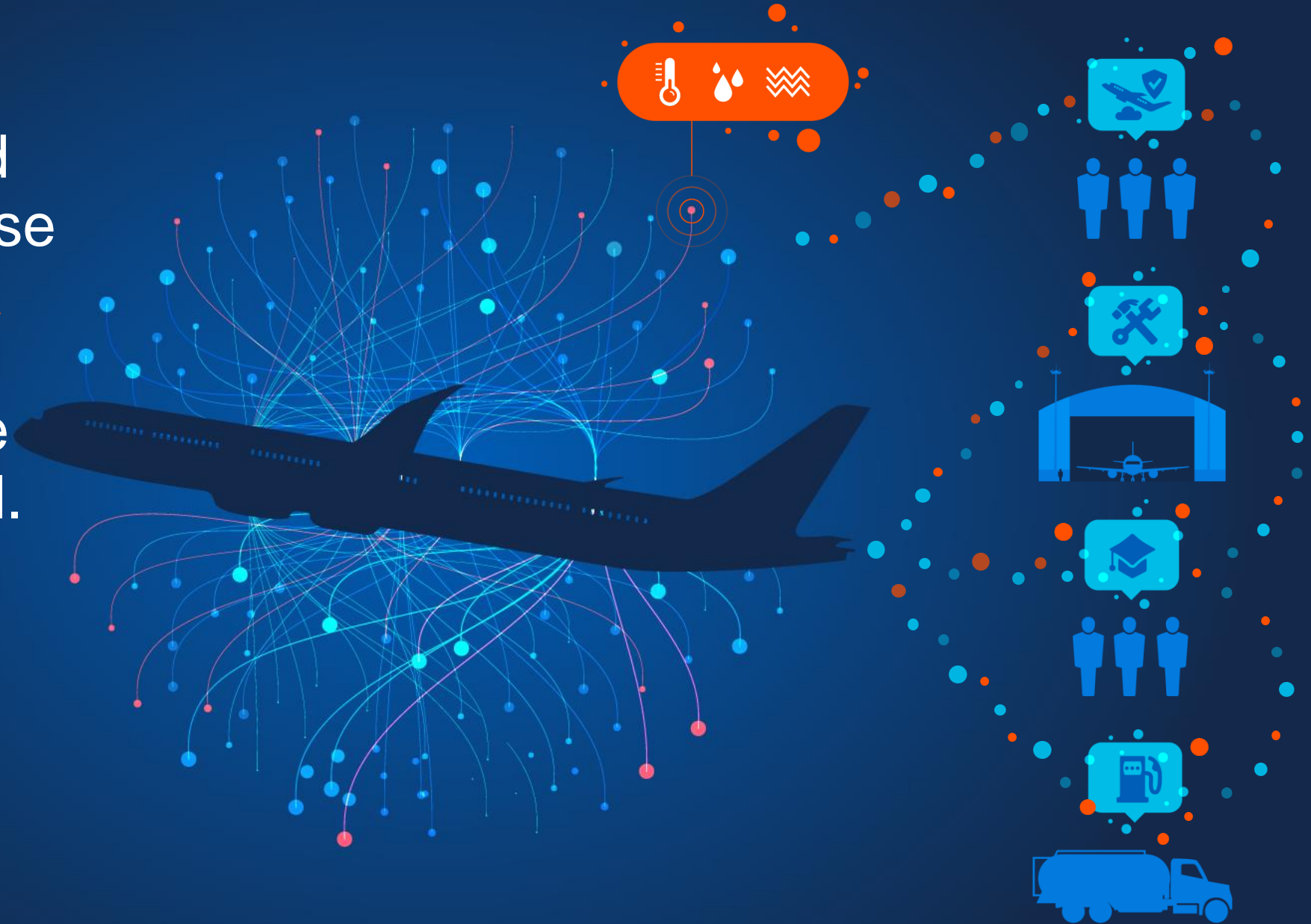
The data from aircraft (**Flight Data**) has traditionally been siloed for use only in the safety analysis process.



Removing this silo  
unlocks **great  
value** to the rest of  
the enterprise.



This is easier said than done, because pushing **bad data** out to a bigger audience is worse than no data at all.

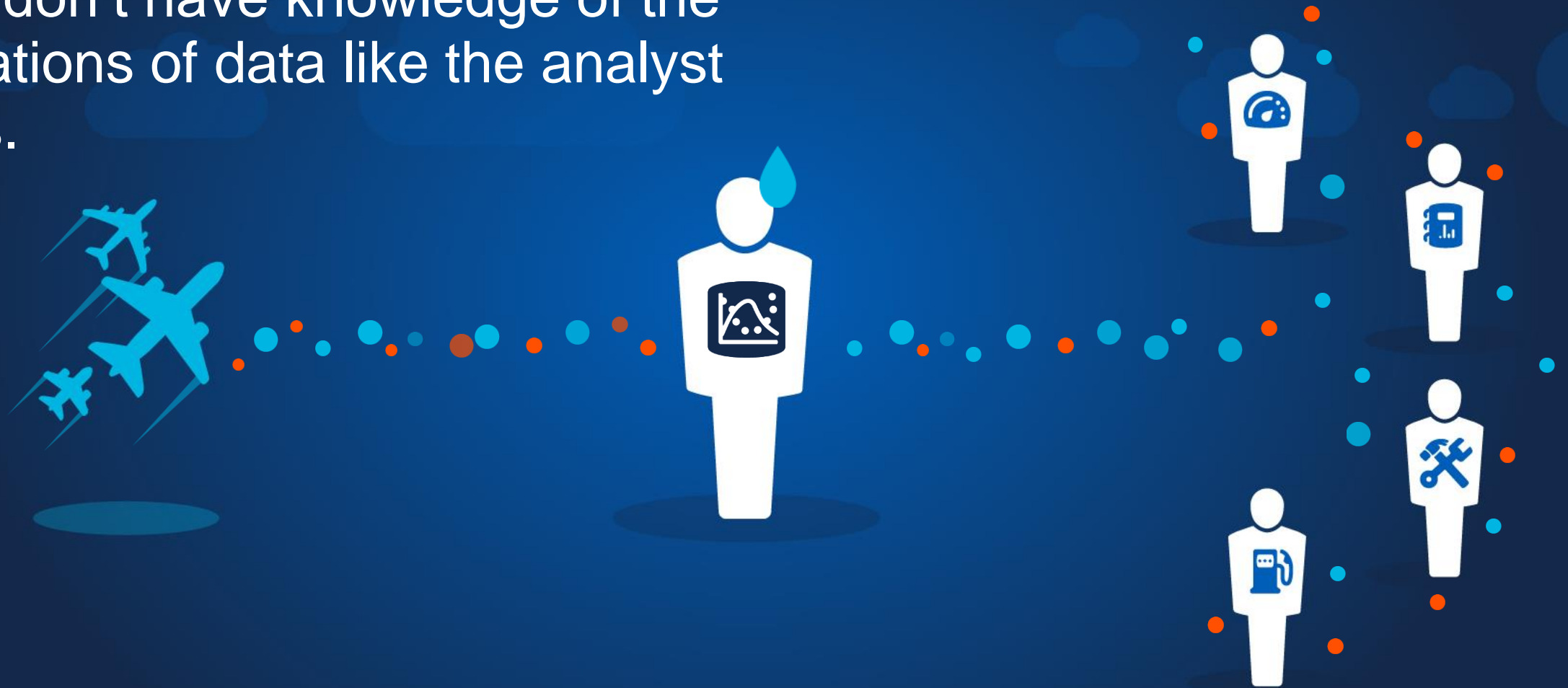




**Small errors** can be manually filtered by humans in the limited scope of safety analysis. They become **big problems** when delivered to the masses.



Unlike the analyst, these other users need **clean data** because they don't have knowledge of the limitations of data like the analyst does.



At GE, we believe the only way to unlock the value of this data is to start with a solid foundation of **automated data quality.**



**175 million**  
flights processed

**730+ TB**  
of data

**30,000**  
flights per day

**35+**  
major airlines

**250+**  
biz jet operators

**ASIAS**  
platform

Our analysis system was architected and evolved through over **20 years of experience** in supporting the world's largest operations, with the goal of supporting the 1 million+ flights per year customer

It provides up to 3X faster upload + up to 12X faster processing + ~20% less false positives than typical systems = up to **5X more productivity**

All of this enables a solid foundation for automated, high quality analytics to deliver data value **across the airline**



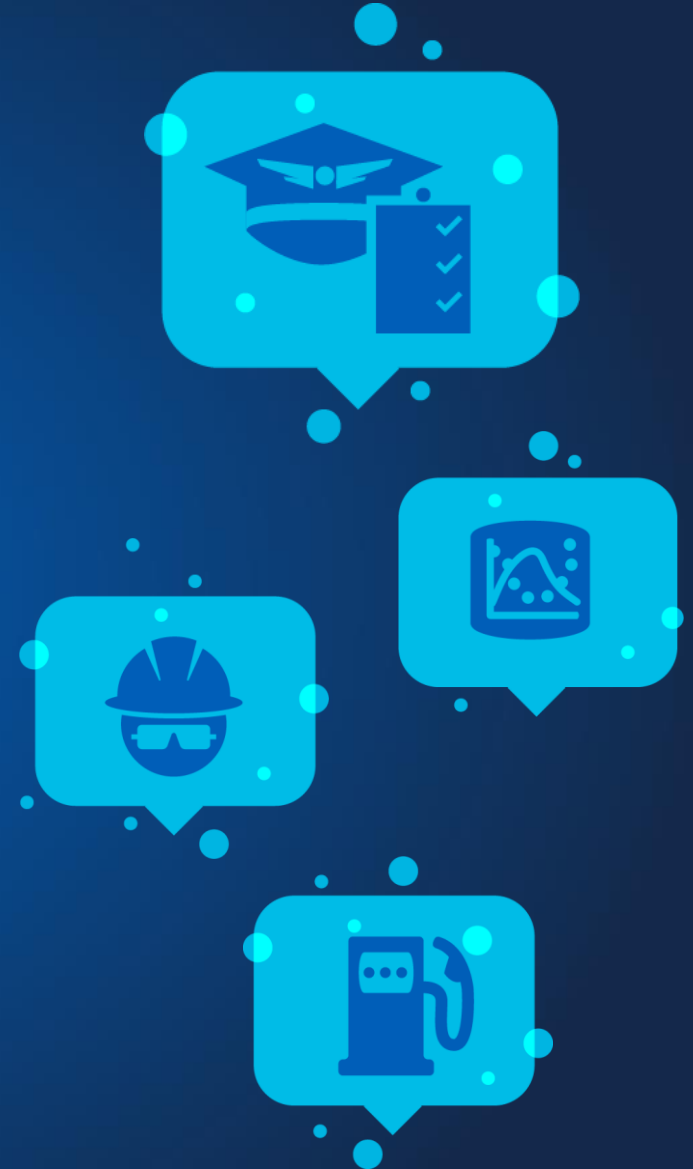
This high quality, automated analytics engine can then fuse flight data with other sources with **high confidence.**



## So what can you do with a true flight data platform beyond FDM/FOQA?

- ✓ Enable advanced maintenance troubleshooting tools
- ✓ Improve flight planning
- ✓ Perform more detailed fuel efficiency analysis
- ✓ Enhance training for flight crews

The options are unlimited and can grow with your digital transformation.



# Flight Analytics Platform

- Incorporates a multi-layer platform (purpose-built for aviation) to generate valuable analytics
- Integrates disparate data sources & uses a powerful analytics engine to extract valuable operational insights
- Seamless data visualization with our Safety Dashboard for fleet management and safety operations
- Modularly designed to enable growth and increase digital capabilities on-demand



Cloud-based



Full-flight data



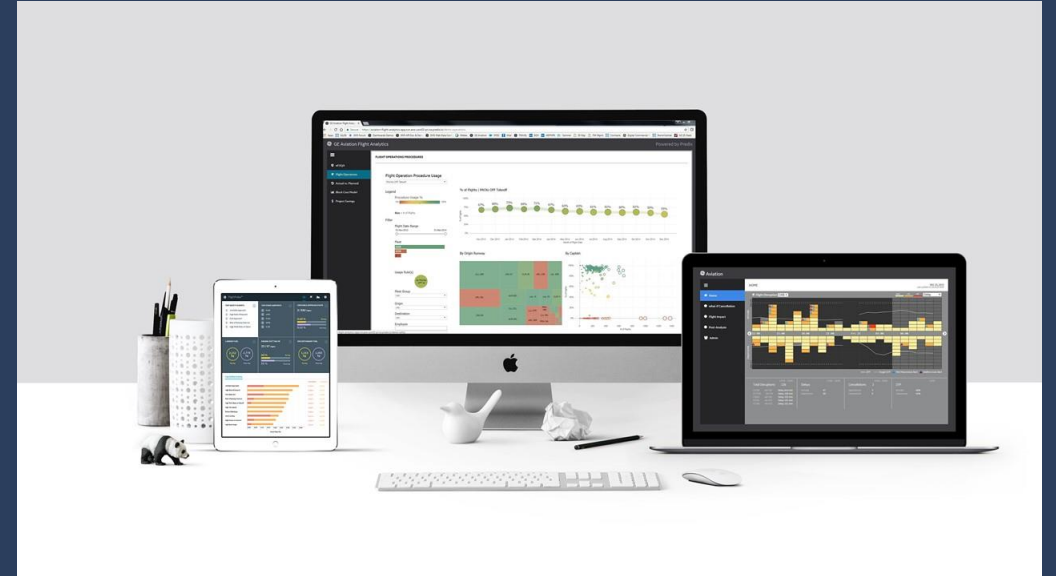
Analytics & Insights



# Moving beyond the safety analyst

## Solution Capabilities:

- Analytics Workbench
- Aircraft On Ground (AOG) Viewer
- Tableau connectivity
- CEFA Flight Animation
- Fuel Efficiency and Monitoring
- Data Warehouse Integration
- API Connectivity
- FlightPulse® iPad-based EFB



Scalability options focused on meeting airlines' needs for growth and digital transformation.



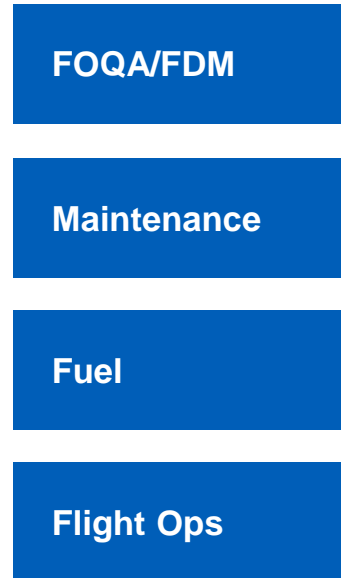
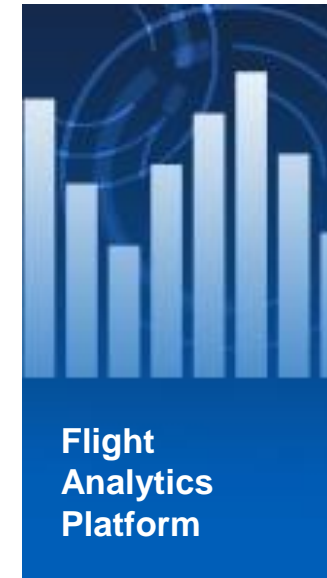
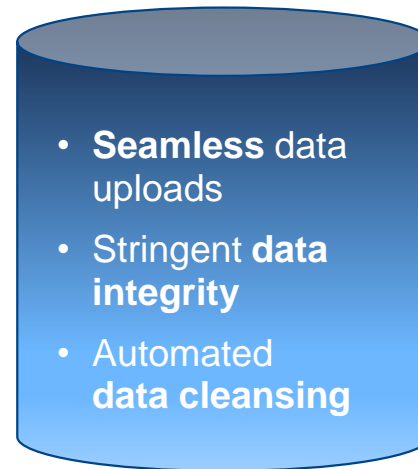
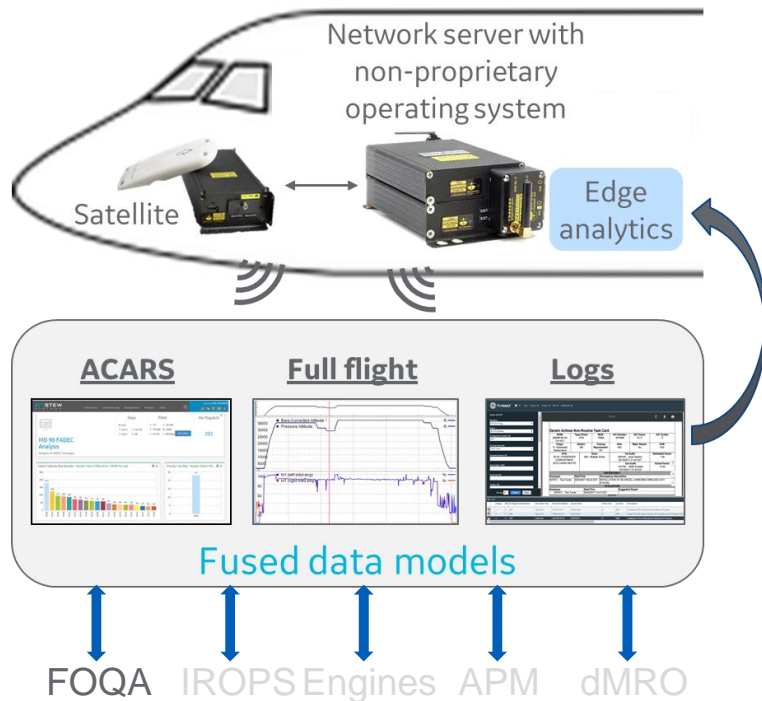
# Real world example: Flight Data driving Predictive Maintenance



# Data connectivity to Flight Analytics solutions

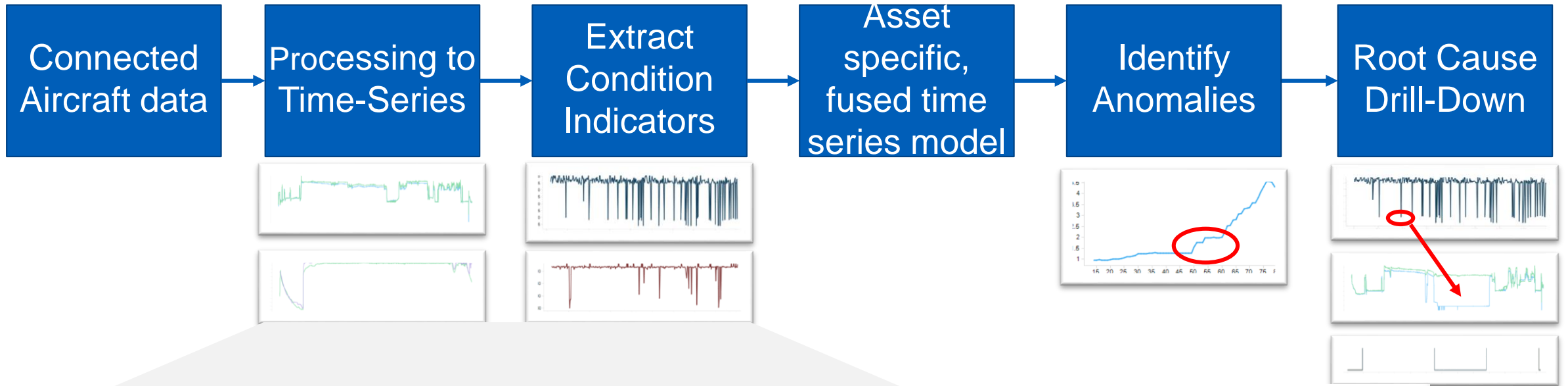
- 1 Increase value of digital investments by expanding access to low latency, **high coverage data**

- 2 Analyze flight performance, build **insights** and forecast results by automated QAR downloads and measuring full-flight results for **Safety, Fuel & Maintenance applications**



- Easily **compare and analyze** multiple flights at once
- Simple editing capabilities for **creating or evolving** analytics
- Extensive **Events Library**

# Flight Data for Predictive Maintenance



### Analytics Studio

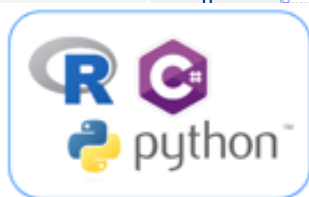
Fault data

### Flight Data

QAR data

### Mx Records

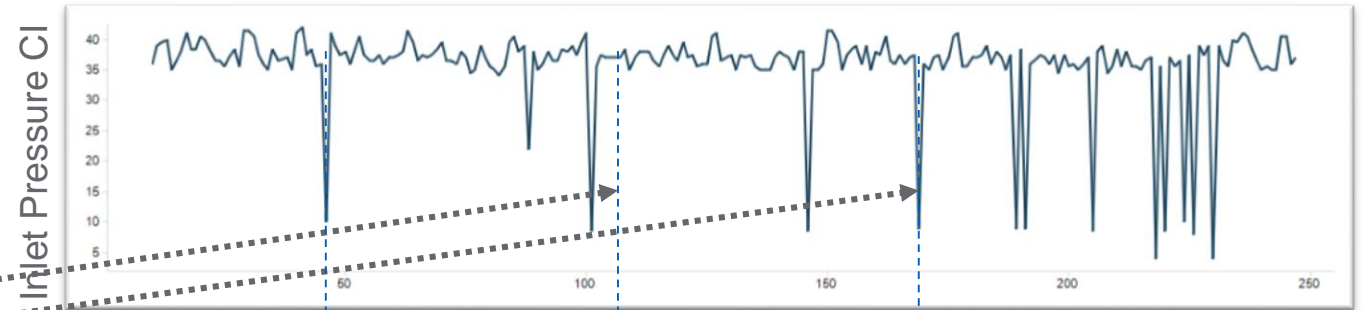
Log/Mx data



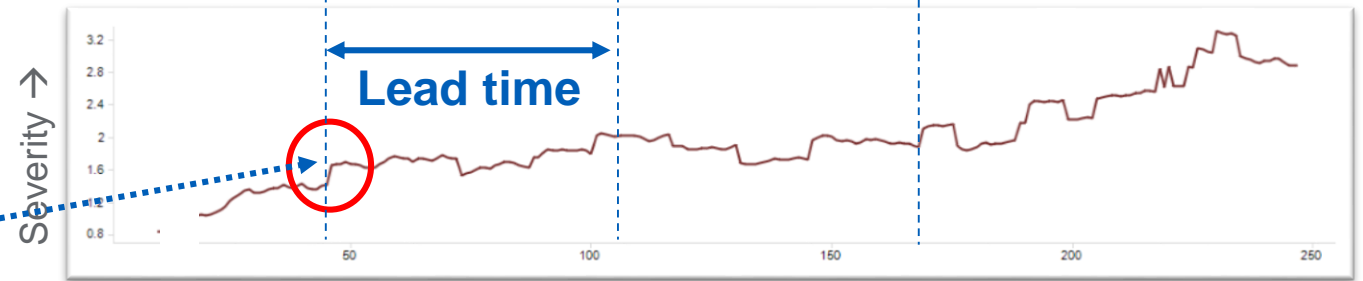
# Real World Example: ATA Chapter 36

Pressure Regulator Valve (intermittent fault not being resolved)

**Precooler Inlet Pressure – Cruise (Condition Indicator)**



**Precooler Inlet Pressure (Alerting measure)**



Flights (1 data point per flight, considers last 30) →

**Mx actions taken:**

- Cockpit bleed message, BMC2 Bite Test OK
- Replaced IP check valve

**Root cause not addressed by both either action**

**Anomaly Identified by model:**

- ~50 flights advance notice vs. ACMS alerts
- Pinpointed to the root cause: PRV

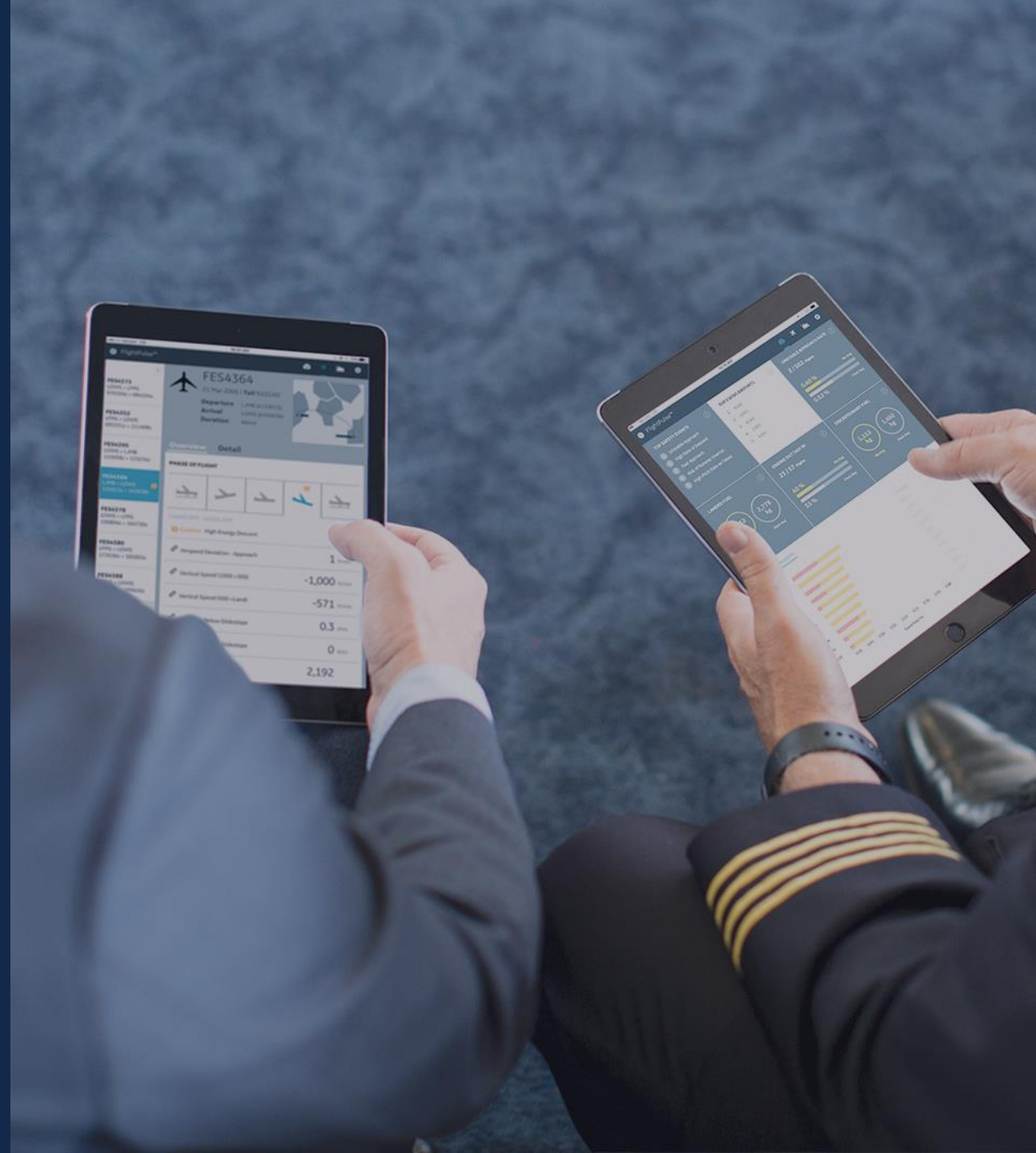


Questions?

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