

CONNECTED MAINTENANCE & MAINTENANCE ADVISOR

Reduce Costs

Improve Turnaround Times

Maximize Lifespan of Parts

Honeywell

THE POWER OF **CONNECTED**



SEPT 2018

Workshop

AGENDA

1 Overview of Connected Maintenance

2 AI as a Key Enabler To Aircraft Maintenance

3 Cognitive Diagnostics and AI

4 Maintenance Advisor – Repair Assistant

5 How You Can Get Started Today

MAINTENANCE ADVISOR

Reduce Costs

Improve Turnaround Times

Maximize Lifespan of Parts

How to tackle this big
concept and make it
work for my operations

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IN A 2018 SURVEY, Airline Industry Professionals Representing Maintenance, Operations, Sales, Fleet, R&D and Even Customer Experience



THE TOP CONCERNS

Maintenance effectiveness

Aircraft turnaround times

Fuel Consumption



CONNECTIVITY-RELATED PRODUCTS

were listed as a high or very high priority for 81% of respondents' businesses



CONNECTED MAINTENANCE

was listed as the #1 most important connectivity product

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MAKING **CONNECTED** MAINTENANCE WORK FOR YOU



You may have heard the terms connected maintenance or predictive maintenance, but do you really know **how it works** and **what it can do for you?**

Learn how you can **leverage the power of connectivity** by linking the physical operation to the digital realm *without disruptive upgrades*

TODAY WE WILL

DEMONSTRATE WHAT BENEFITS

your operation can derive through Connected Maintenance
- *without modifications* – by leveraging data that already exists

REVEAL HOW ONE AIRLINE IMPROVED PASSENGER EXPERIENCE,

and saw a *30% reduction* in inoperable equipment by implementing Honeywell's Connected Maintenance program

DESCRIBE HOW TO TAKE AN INCREMENTAL APPROACH

to adopting Connected Maintenance that meets the needs of your operations.

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WHAT IS IT?



Blending Airline, OEM
and MRO data,
applying advanced
analytics and leveraging
knowledge to
**unlock powerful
maintenance
solutions**



Engineering Knowledge
+ Design Knowledge
+ R & O Knowledge
+ Data Analytics
=
**Holistic View
Predictive
Maintenance
Solution**

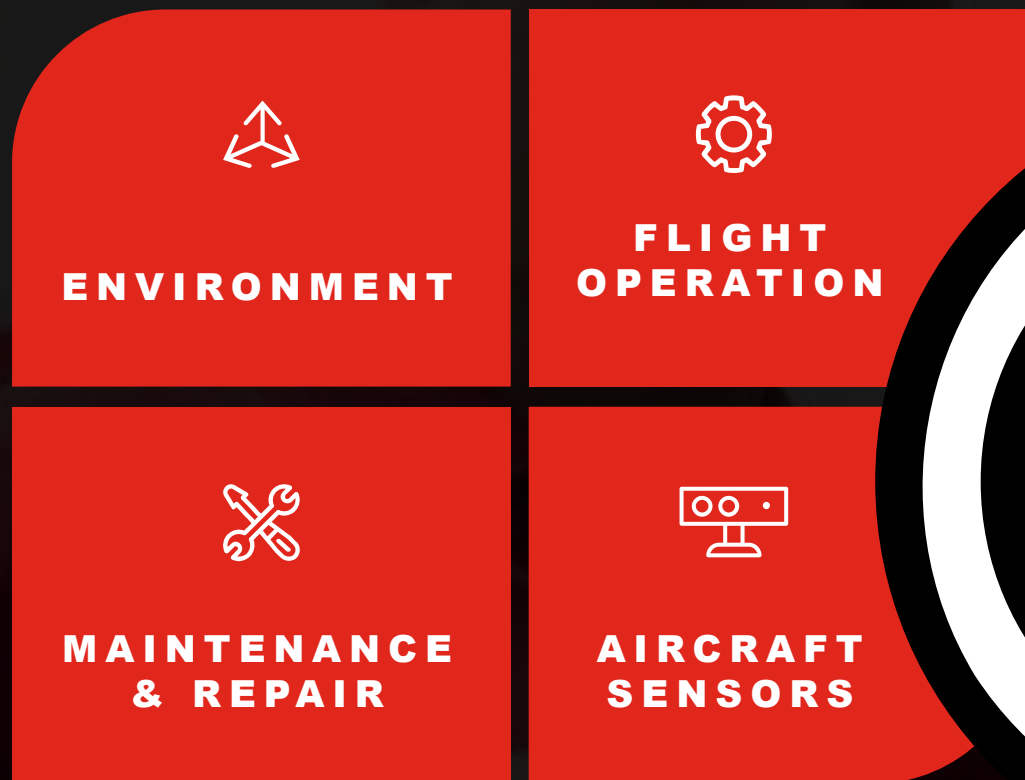


Designed to improve
aircraft availability by
converting an
unscheduled maintenance
event into a
**predictive,
Targeted
scheduled
maintenance**

OUR GOALS

Reduce Delays | Cancellation | Operational and Maintenance Costs

HOW DOES IT WORK?



PREDICTIVE & DIAGNOSTIC ALERTS

Issue Analysis

Pinpointed Parts

Solution Prescription



AI SYSTEMS WORK LIKE A HUMAN BRAIN



Process Information



Draw Conclusions



Codify Instincts &
Experience Into Learning

MAKING CONNECTED MAINTENANCE WORK FOR YOU

A future-proof solution



Improved Accuracy



Scalability



External Factors



Adaptability



Security



In-Context Remediation

BENEFITS OF COGNITIVE DIAGNOSTICS

Compared to Traditional ACARS-Driven Health Management, Cognitive Diagnostics Covers...

THE WHOLE FLEET

Covers all types in a mixed fleet with one deployment

Provides the same high level of analytics for all aircraft types, regardless of age

THE WHOLE AIRCRAFT

Provides rich analytics and recommendations across all ATA chapters

Identifies long term trends and patterns for quality in non-ACARs-reporting components, i.e. seats

TRIBAL KNOWLEDGE

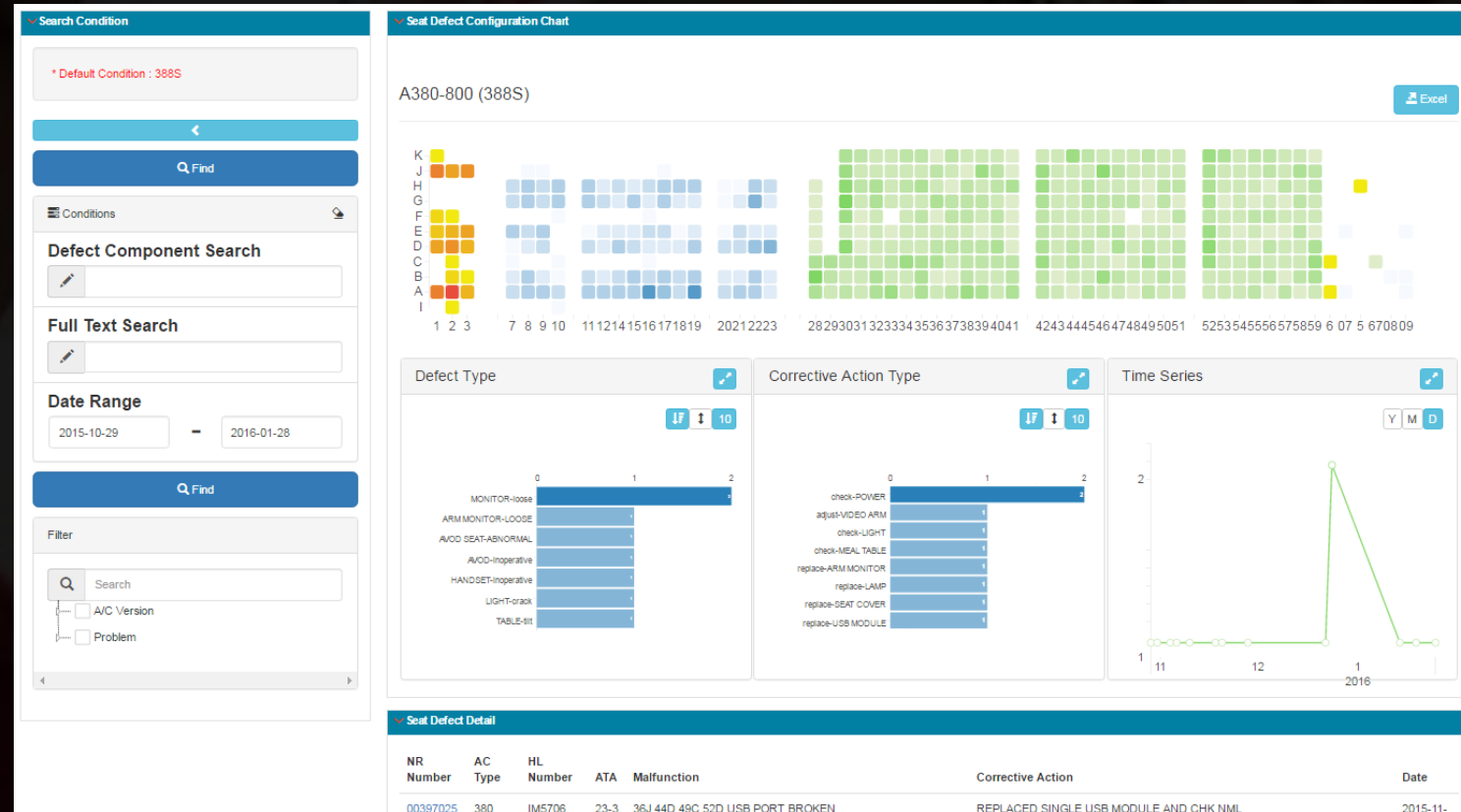
Delivers corrective actions across all ATA chapters from an airline's own maintenance history

Embeds tribal knowledge for when reality differs from "by the book"

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EXAMPLE: SEAT HEALTH MANAGEMENT



REDUCE MAINTENANCE TROUBLESHOOTING TIME


CURRENT STATE OF MAINTENANCE TROUBLESHOOTING

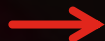
 Troubleshooting increasingly complex systems




GODIRECT™
Maintenance Advisor
Conducting Trials (Launch In 2018)

100%
Aircraft systems across mixed-fleets

 Knowledge in Silos & Specific Human Capital




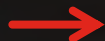
CAPTURE
& leverage organizational knowledge

 High NFF rates and misdiagnosed events



REDUCE
misdiagnosed maintenance events

 Analytics unavailable on paper/manual processes



100%
Digital data capture

HOW IT WORKS

Mobile Based Application for use by Maintenance Technicians

Advanced search capability of maintenance manuals + airline maintenance notes

Documents are ingested into artificial intelligence system

Digital transformation provides data stream for machine learning and improved operational efficiency



Troubleshoot Smarter & Faster when Prognostics Solutions are not Available...

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**MAINTENANCE
MANUALS**

**TECH LOGS/
MAINTENANCE
REPAIR RECORDS**

**AIRCRAFT
FAULT DATA**

**GoDirect™
Maintenance
Advisor**
(Artificial Intelligence)

“Reads” in maintenance manuals
“Reads” tech logs and
maintenance repair records
Becomes a computerized
encyclopedia of information that
powers Maintenance Advisor apps

Repair Assistant

Save time finding the right information you need from your maintenance manuals

Cognitive Diagnostic

Instantly see how your problem has been solved in the past across your fleet

Automated Report Generation

Push-button creation of maintenance repair reporting

Hands-free step-by-step repair

Hands-free step—by-step repair assistance with integrated voice search

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INGEST MANUALS



IMAGE TASK

Troubleshooting Maintenance Fault Codes
Technical Documents & Publications

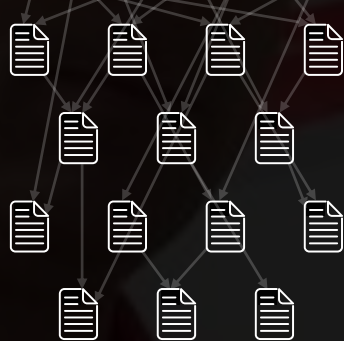
MAINTENANCE TECH LOGS



IMAGE TASK

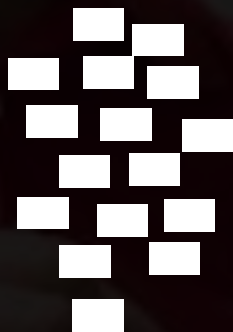
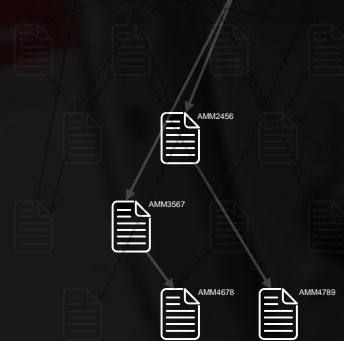
Current View of Document Structure

1 2 3 4 5 6 7 8



Document Structure by Fault Code

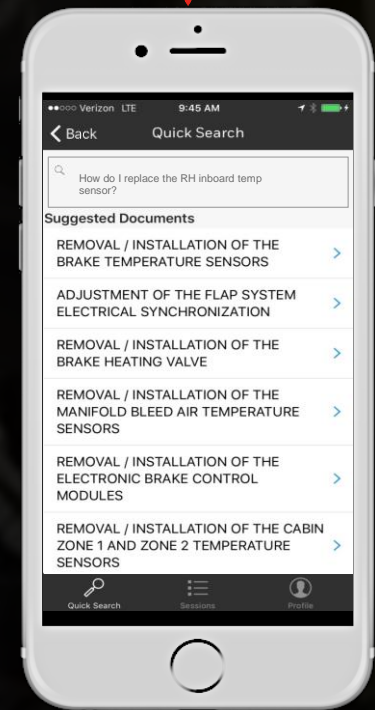
1 2 3 4 5 6 7 8



HON SERVERS



APIs

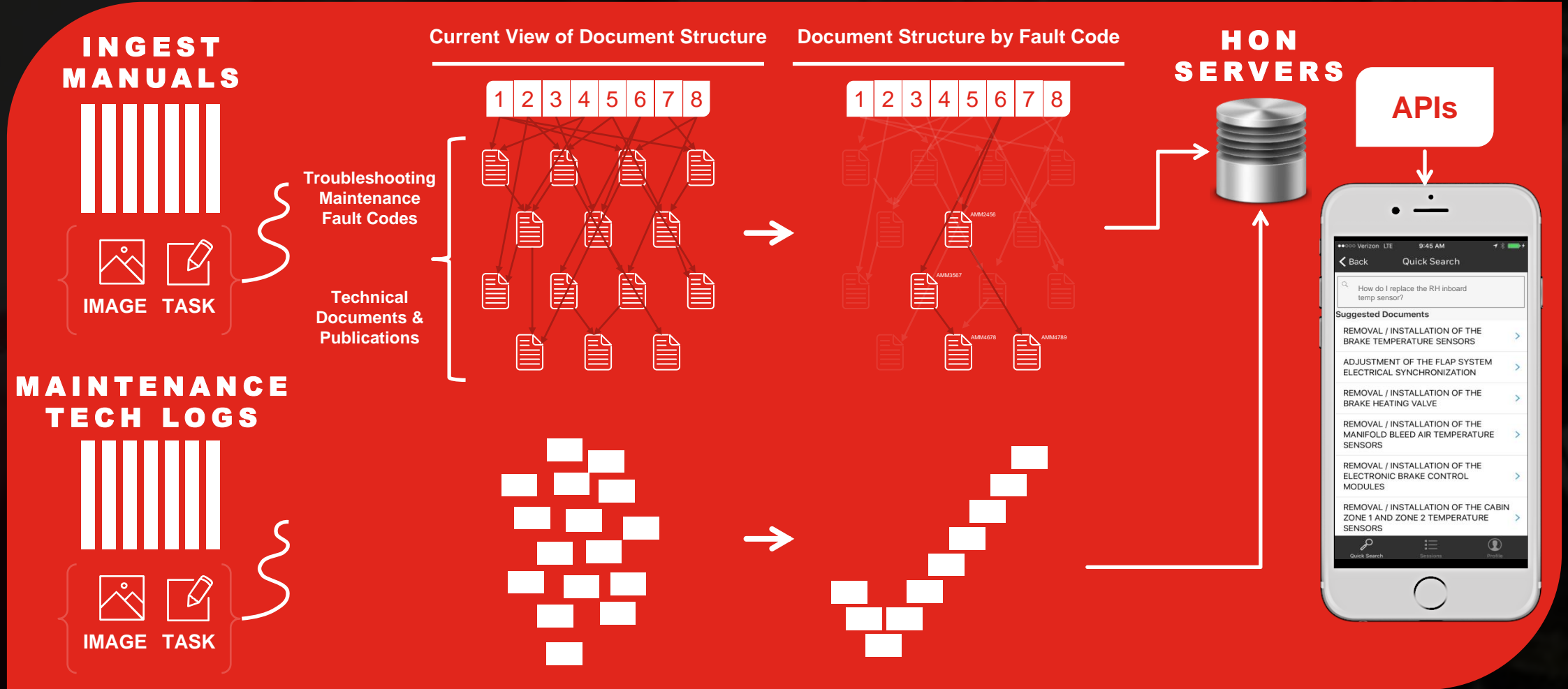


RAPID TROUBLESHOOTING ADVICE = IMPROVED BOTTOM LINE



ALT

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RAPID TROUBLESHOOTING ADVICE= IMPROVED BOTTOM LINE

WHAT'S IN IT FOR YOU

REDUCE

- ① Cost
- ⌚ Delays & Cancellations
- 🕒 Inventory & Lead Times

- ✈ Aircraft Availability
- 📅 On Time Performance
- 📈 Part Lifespan

IMPROVE

**IMPROVED PASSENGER EXPERIENCE
= IMPROVED BOTTOM LINE**



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THANK YOU!

Honeywell is building a smarter, safer,
and more sustainable world

THAT'S THE POWER OF **CONNECTED**
THAT'S THE POWER OF **HONEYWELL**

Connected Aircraft • Connected Automobile • Connected Home • Connected Building
Connected Plant • Connected Supply Chain • Connected Worker

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