Predictive Maintenance

KLM Royal Dutch Airlines

Floris Freeman

January 26th, 2021

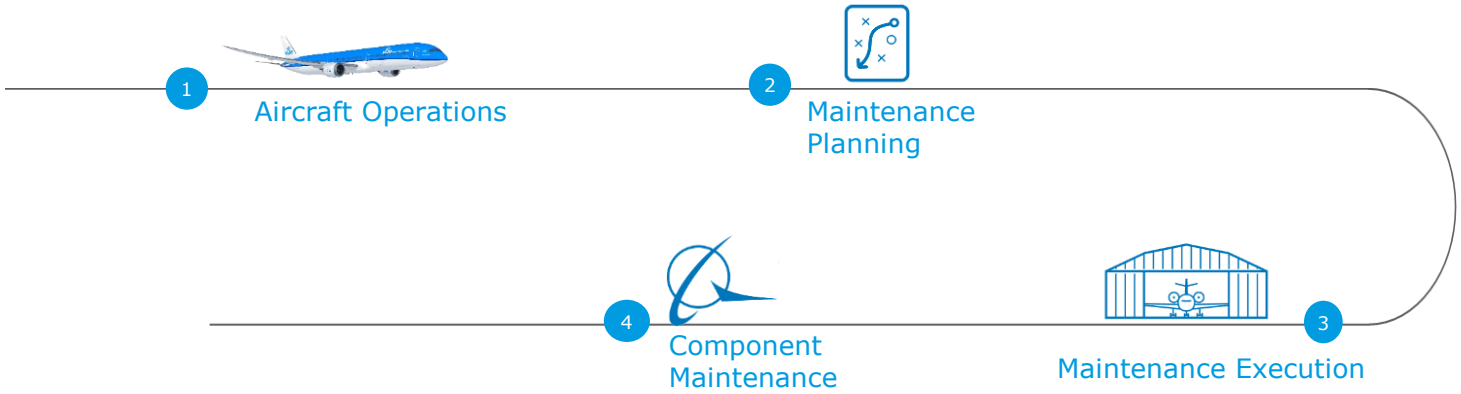
Royal Dutch Airlines

About me

- Studied Aerospace Engineering in Delft (2006-2014)
- (Research) Engineer Royal Dutch Shell (2014-2018)
- Research Lead at KLM Royal Dutch Airlines (2018 – *now*)

Floris Freeman
Floris.Freeman@klm.com

Rise of Big Data in Aircraft Maintenance



Predictive Aircraft Maintenance

"Increasing fleet earning potential"

WHY (business objectives)

- Maintenance accounts for 10-15% of airline cost
- Maintenance accounts for ~40% of ground-time usage
- Maintenance accounts for ~10% of operational disruptions

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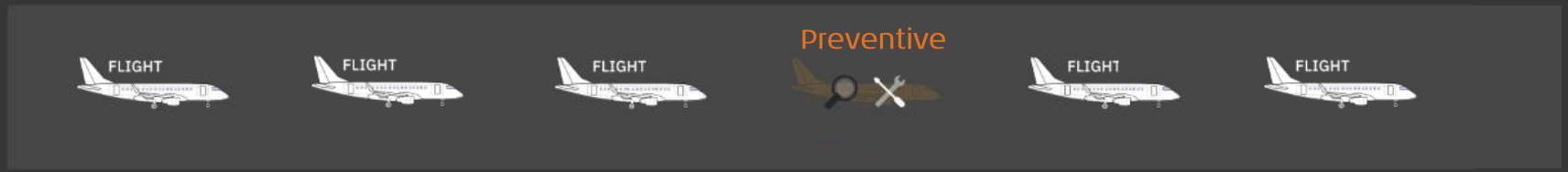
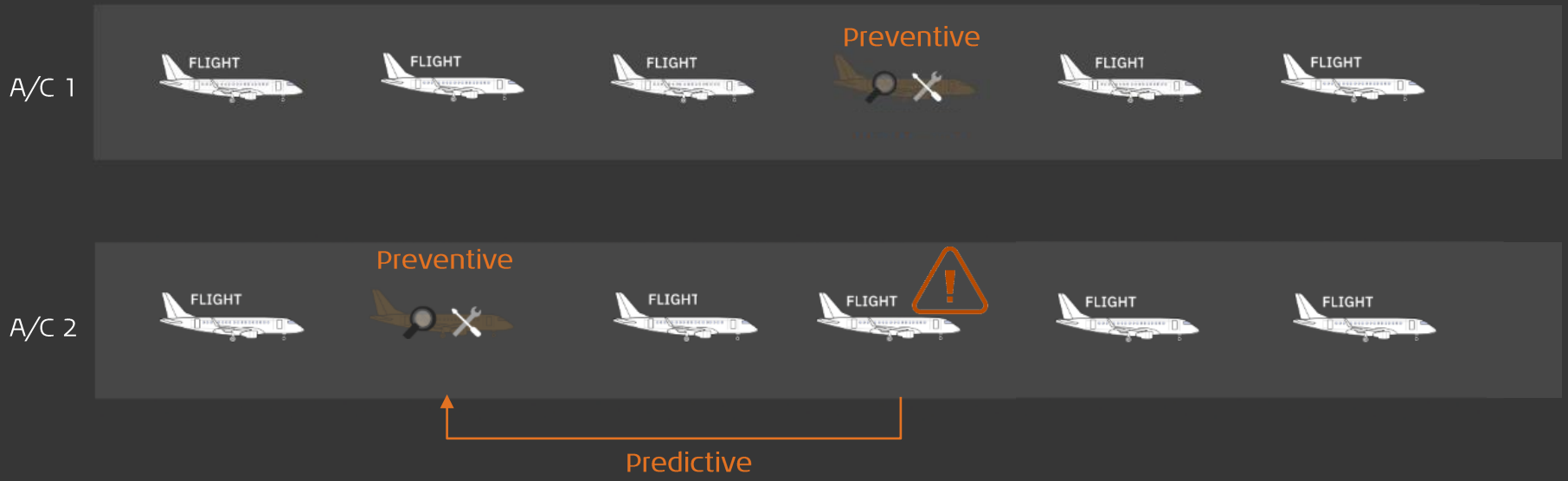
- Corrective maintenance to mitigate non-critical faults
- Predictive maintenance to schedule tasks more conveniently

A/C 1



A/C 1
FLIGHT
FLIGHT
FLIGHT
Preventive
FLIGHT
FLIGHT
A/C 2
FLIGHT
Preventive
FLIGHT
FLIGHT
Corrective
DELAY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WHAT (current practice)

Delivering decision support to anticipate faults and schedule in convenient maintenance slots, thereby reducing i) cost,, ii) delays & cancellations, iii) required ground-time

Prognos®
KLM
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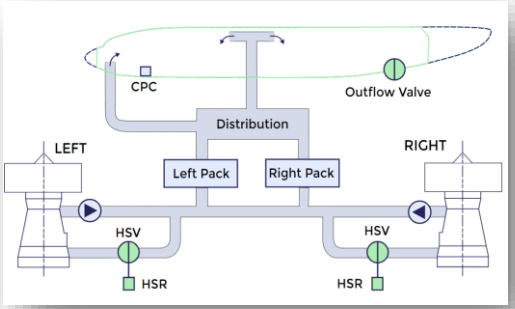
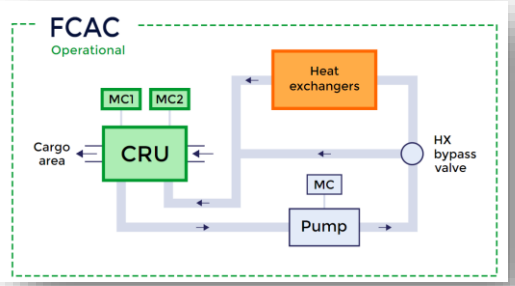
AIRFRANCE KLM
Sunflower

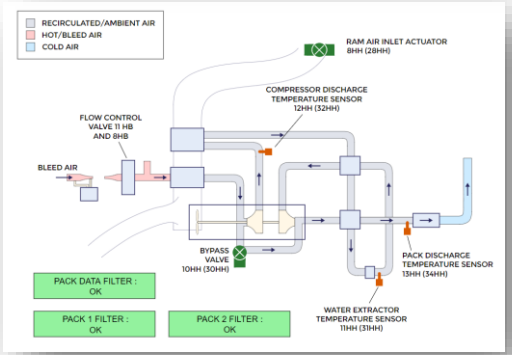
Prognos® for AIRCRAFT

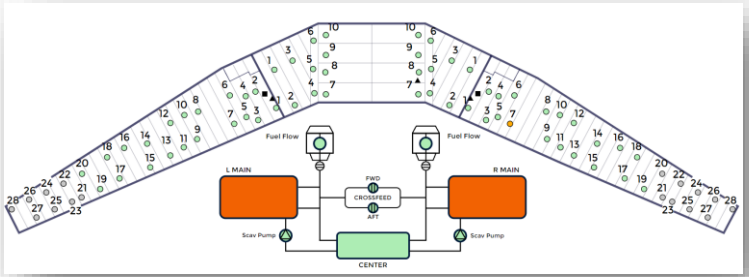


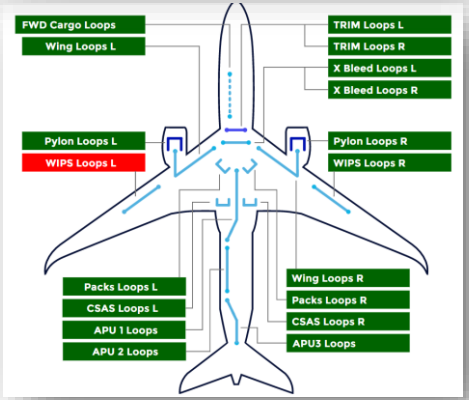
Available on:

Airbus A320 Boeing 737
Airbus A330 Boeing 747
Airbus A350 Boeing 777
Airbus A380 Boeing 787

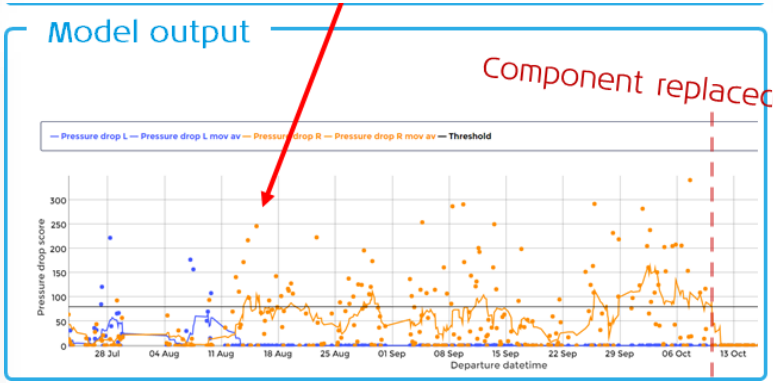








Prognos® for AIRCRAFT



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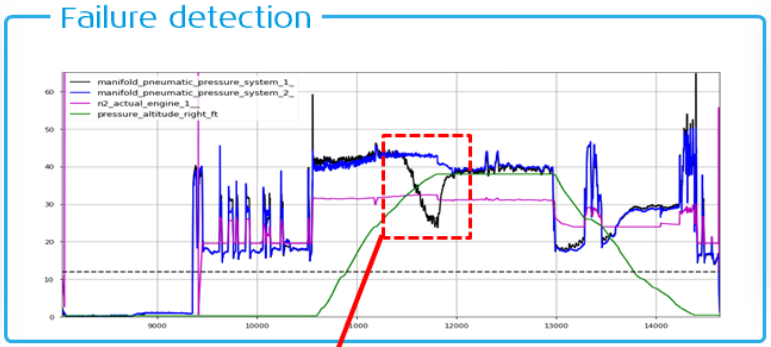

How to start?

1. Prioritize
2. Simplify
3. Partner-up
4. Prepare for Big Data
5. Fall-Back

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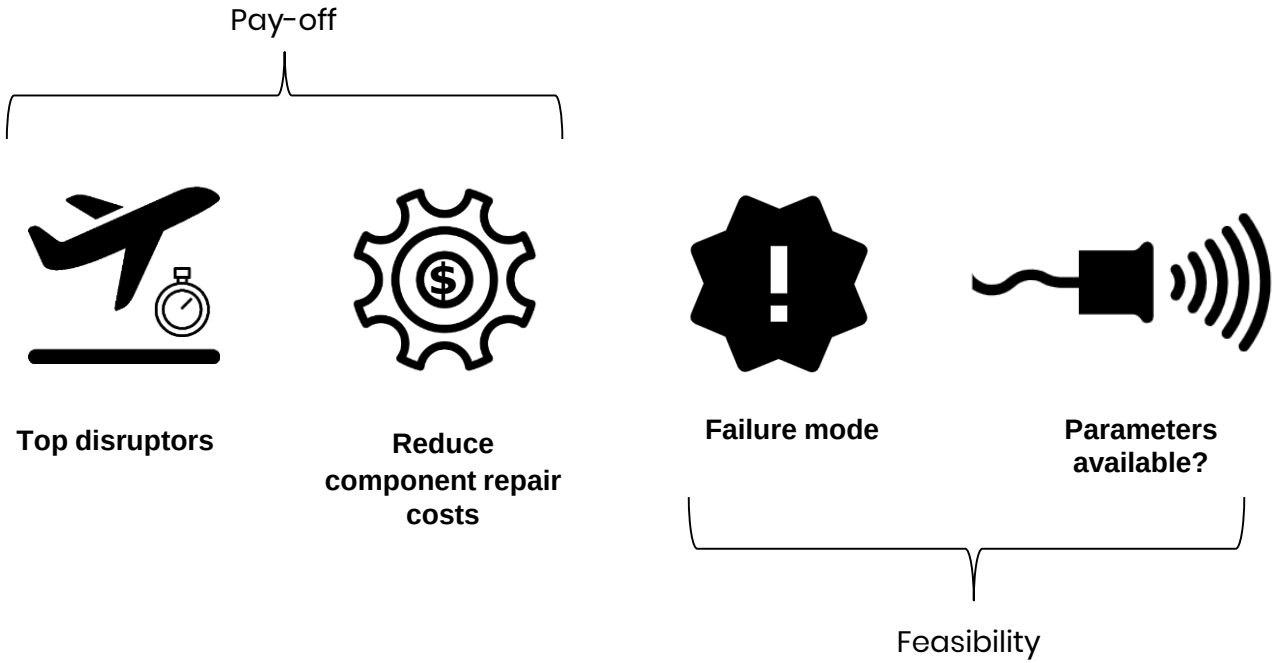

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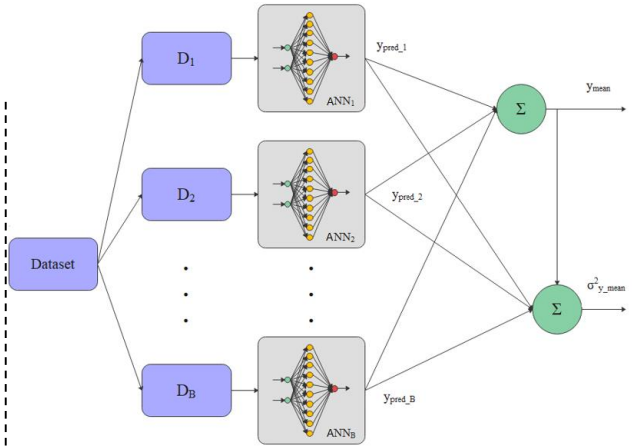

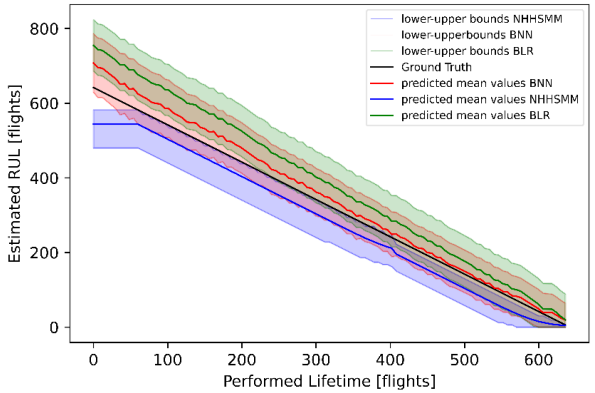

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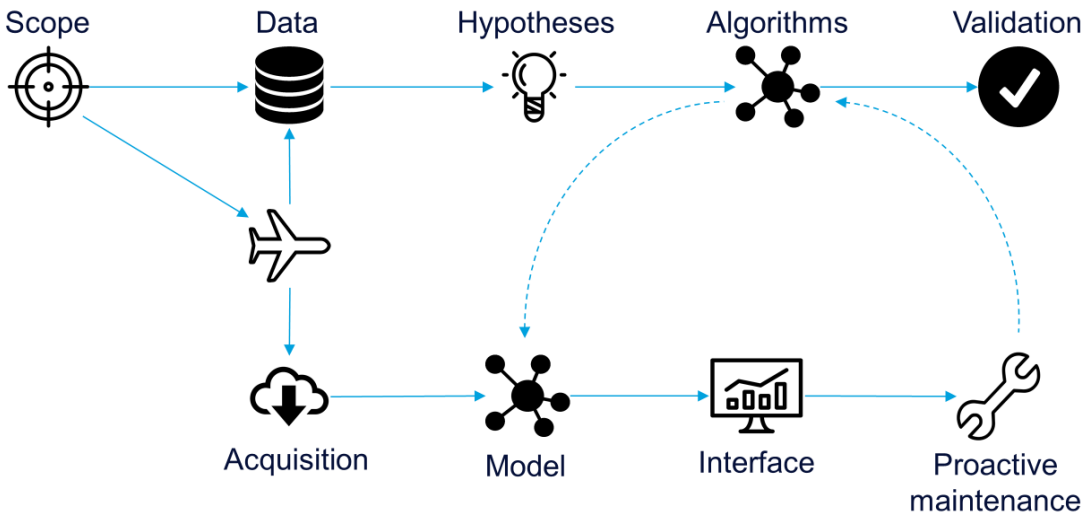

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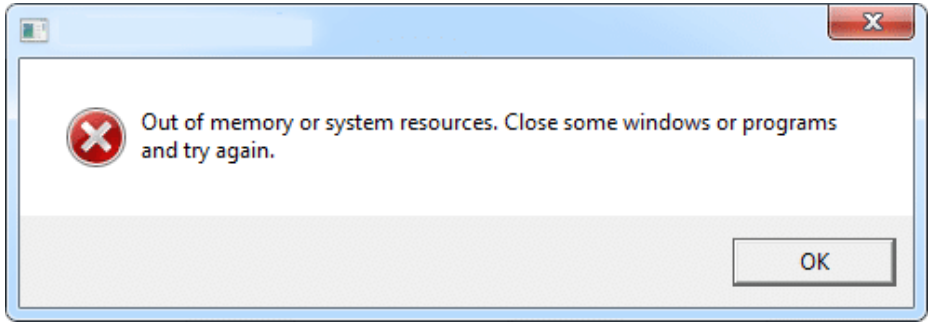

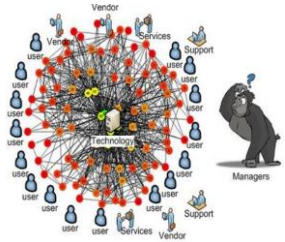

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