



OPTI CLIMB

More savings, less CO₂

OptiClimb: Fuel Savings through Machine Learning models



Data Science in Aviation Workshop

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SAFETY LINE

Big Data applied to Aviation

CORPORATE INTRODUCTION

Data Science approach

Data science can offer a way to make use of black box data to **identify causes** through correlations.



Collateral:
The Data can also be used to **improve operational efficiency.**

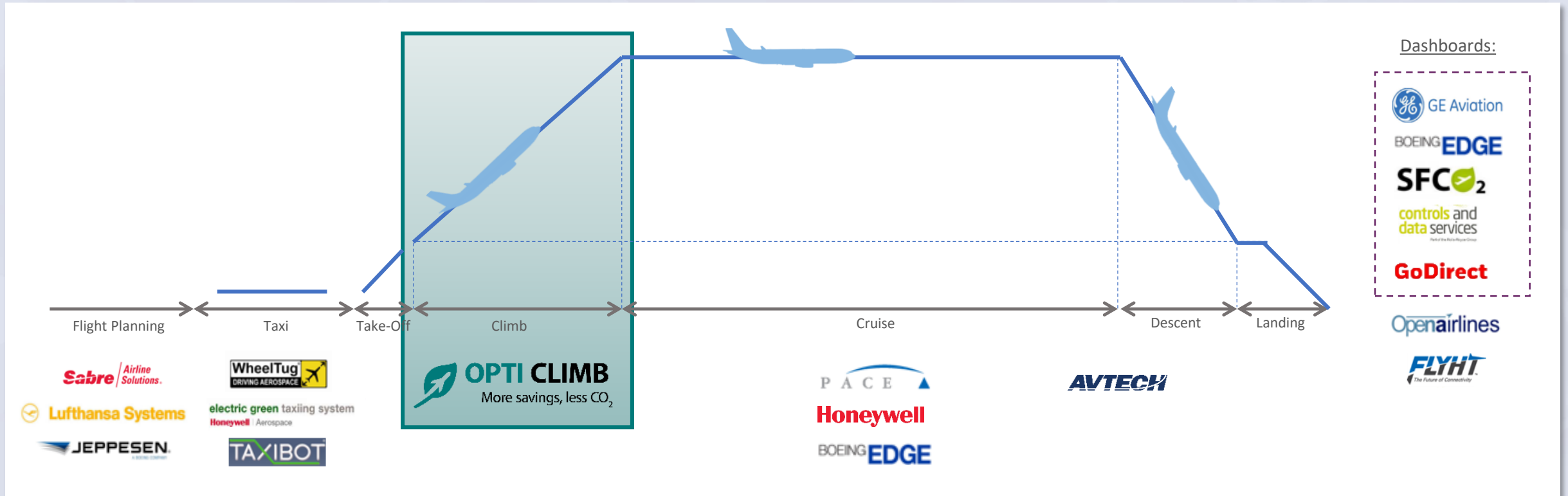
BIG DATA SOLUTIONS

FOR SAFETY AND EFFICIENCY OF AVIATION OPERATIONS



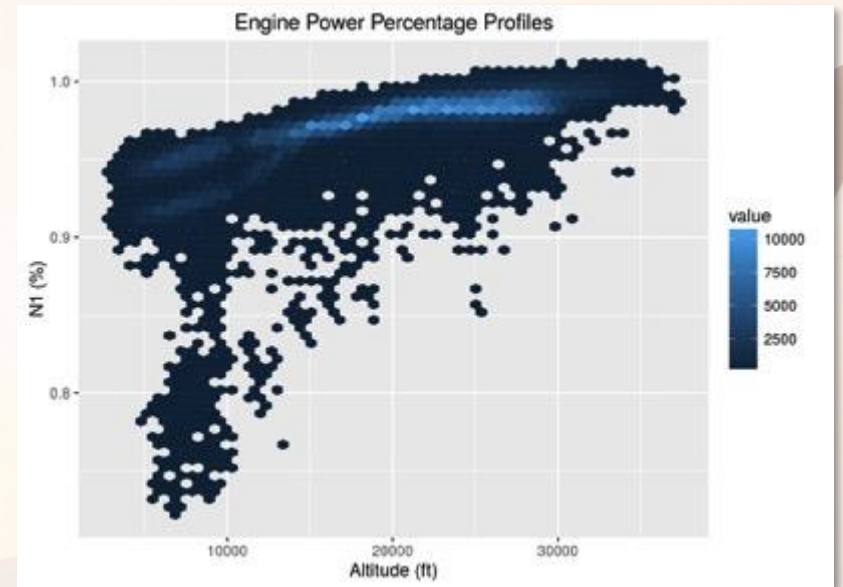
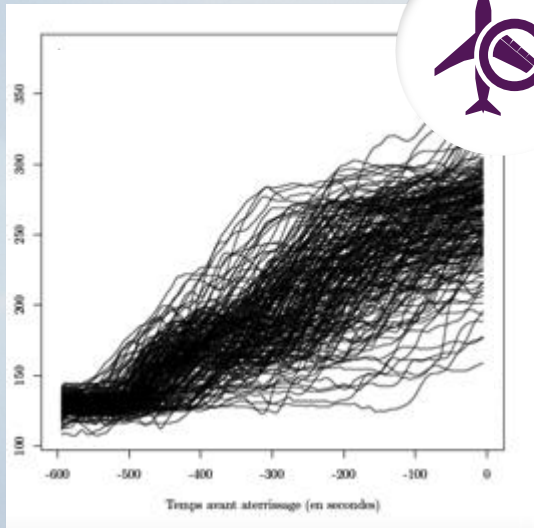
FUEL EFFICIENCY ENVIRONMENT

OPTI CLIMB is the only solution focusing on the **climb phase**.



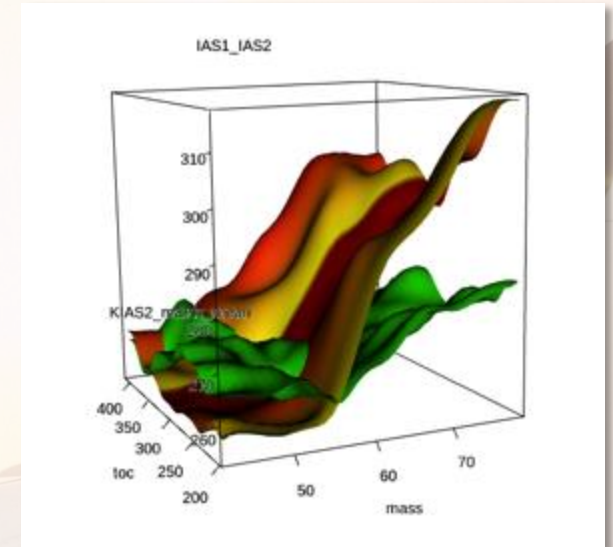
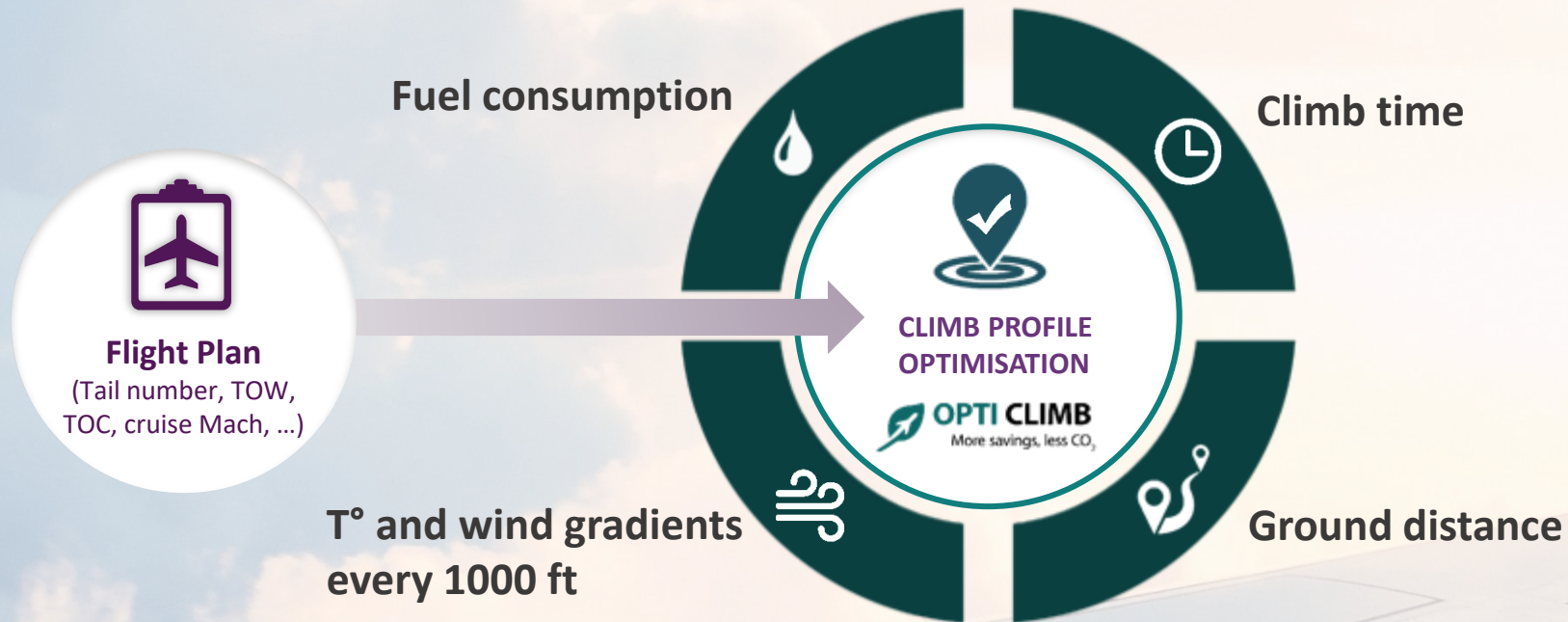
TAIL NUMBER SPECIFIC PERFORMANCE MODELS

Historical QAR Data
for each aircraft



OPTIMIZATION OF EACH CLIMB

Reach the same point in ground distance at the same time with a more efficient trajectory



OPTI CLIMB IN SUMMARY

FMS
aircraft centric



OPTI CLIMB
connected aircraft



Historical QAR Data
for each aircraft



**MACHINE LEARNING
PERFORMANCE MODEL**

OPTI CLIMB
More savings, less CO₂



Flight Plan
for each flight



**CLIMB PROFILE
OPTIMISATION**

OPTI CLIMB
More savings, less CO₂




Accurate 4D
Weather



5-10%

**FUEL SAVINGS
IN CLIMB PHASE**

ECOFLYING THE AIRCRAFT



OPTI FLIGHT
 More savings, less CO₂

Flight no.	123456	Date	2017-12-18	CO ₂ increase	1
ACC	123-AB	From	11A	To	08T
Total	60000	Booked off	15:45 Z	Booked in	19:15 Z

Recommended best practices for this flight

OPTI CLIME

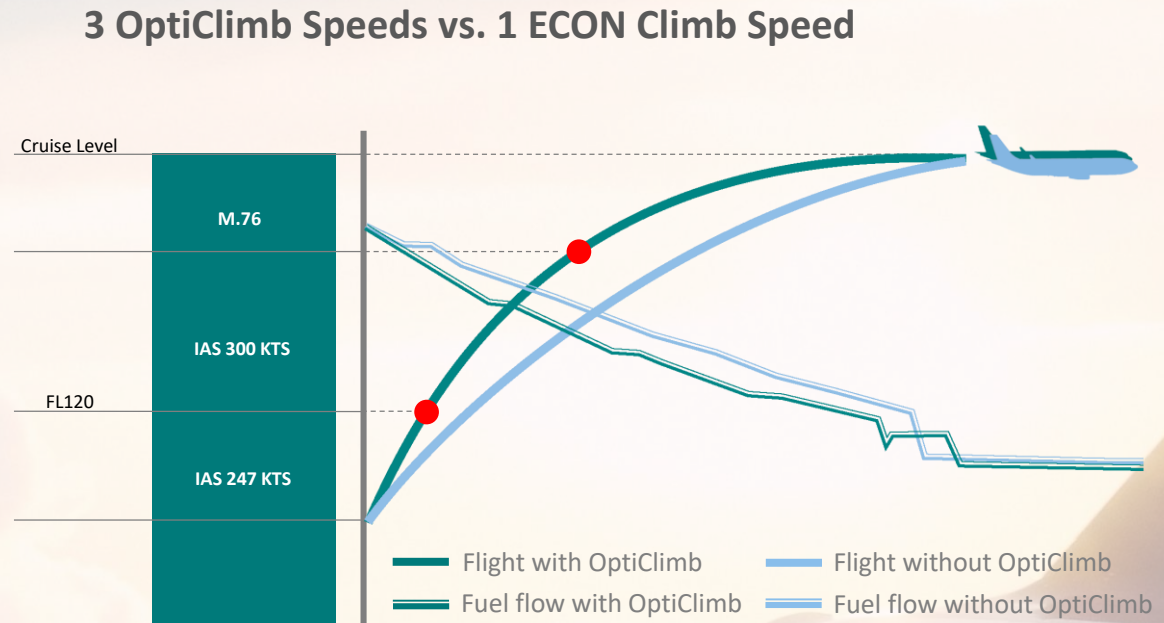
All instructions to be entered in the FMS CLB page during cockpit preparation

- ➔ Enter **TEST 295 / F/76**
- ➔ Enter **OPT 246 / F1323**

The above requests are computed for a TCC of 100%.

Above F1320, please revert to ECON CLIME mode.

Generated at 11:21 2017-12-18 08:00:00+00 by safety_line



CRZ ALT
FL380
TGT SPD
269/770
SPD REST
234/FL172

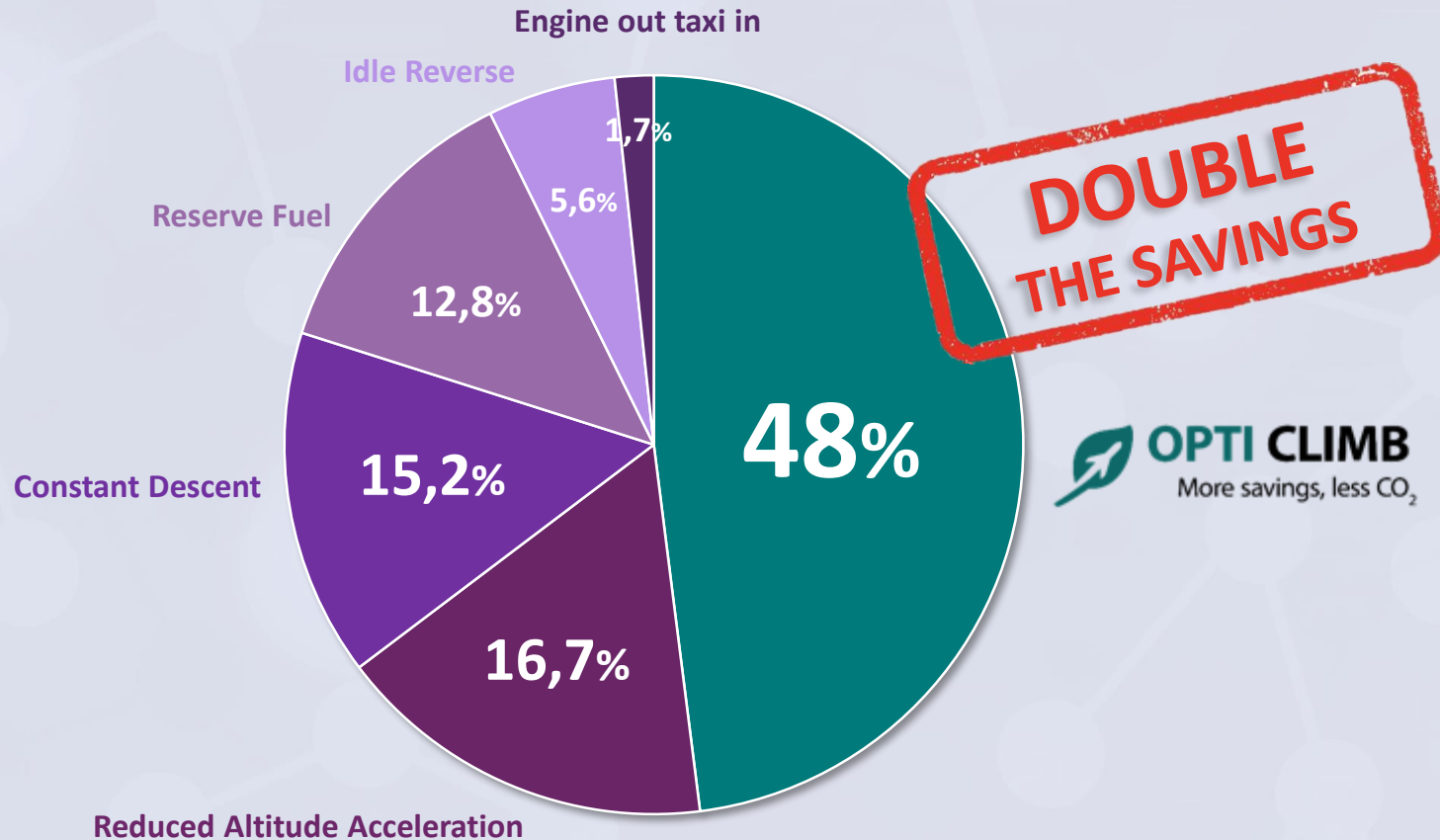
<MAX RATE
<MAX ANGLE
RTA>

ECON CLB 1/1

TO T/C
0817z/63 NM

During cockpit preparation SPD REST: 247 / FL120
TGT SPD: 300 / 0.76

THE SINGLE MOST EFFICIENT FUEL SAVING INITIATIVE



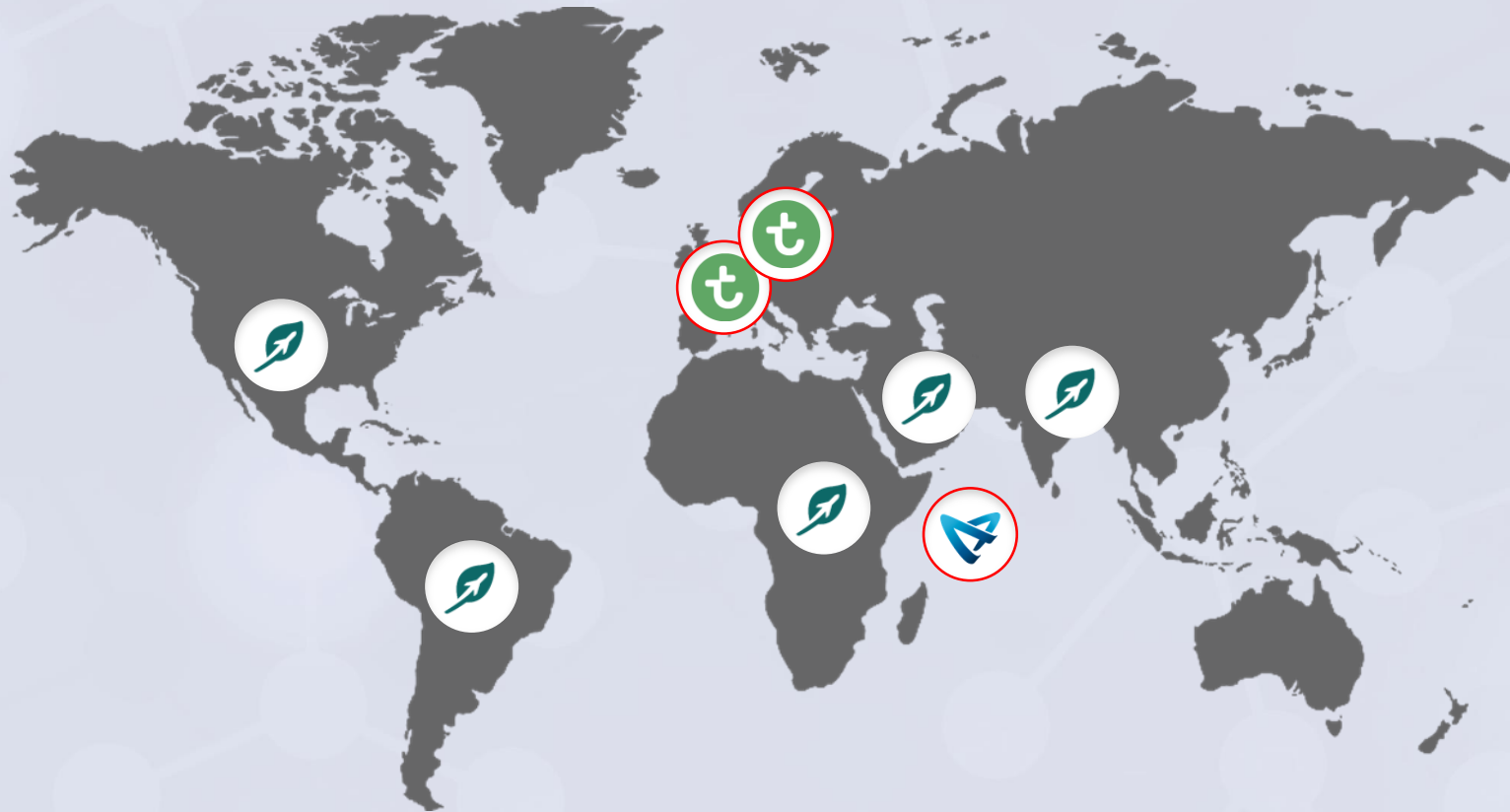
transavia
33 x 737-800

76kg fuel savings per climb

1,5M\$ annual savings

7040t CO₂ annual footprint reduction

OPTI CLIMB TEST & CUSTOMERS



- **3 customers**
- **28 test airlines worldwide**
- **LCC & Legacy airlines**
- **Total fleet of over 1000 aircraft**
- **Multiple aircraft types :**
 - 737NG
 - A320 Family
 - A330
 - 747-8
 - CRJs
 - Ejets



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Thank you for your attention !

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