

THALES Building a future we can all trust

SHAPING OUR FUTURE SKIES

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Executing More Eco-friendly Procedures with Thales

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Speakers





Benjamin BINET

VP Strategy Airspace Mobility Solutions, Thales

David ANTONELLO

Green Operations Project Leader Airspace Mobility Solutions, Thales







Agenda

CONTEXT & POSSIBLE ACTIONS
GREEN OPERATIONS AT THALES
Q&A







Agenda

1. CONTEXT & POSSIBLE ACTIONS

- 2. GREEN OPERATIONS AT THALES
- **3. Q&A**







AND AFTER ?





Green Aviation's Challenge

Acting now

Execute more eco-friendly operations

From CO2-based KPIs to Climate-change ones





TO REDUCE CLIMATE IMPACT OF AVIATION





Major Room for Improvements

Short Term Solutions < 2030

- Sustainable Aviation Fuel (SAF) (5-10%*)
- A/C Fleet Renewal (15-20%*)
- Eco-Friendly Operations (10-15%*)
- * Foreseen CO2 emissions reduction



EXECUTE MORE ECO FRIENDLY OPERATIONS TO GET SHORT TERM RESULTS





How to Reduce CO2 Emissions?





Non-CO2: the Hidden Side



1/3rd of aviation's total climate impact

non-CO

2/3rds of aviation's

total climate impact

Reducing CO2 emissions is a first step

Next step = reduction of aviation GWP (Global Warning Potential)

Eco-friendly operations could reduce from 20 - 25% the climate impact of Air Transport (CO2 + non CO2)



Source: EASA, Updated analysis of the non-CO₂ climate impacts of aviation and potential policy measures pursuant to the EU Emissions Trading System Directive Article 30(4), 2020

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ANSP Key Stakes

How to frequently execute Green procedures ?

How to **coordinate** our intentions & efforts with the different stakeholders ? How far can I contribute to reduce the climate impact ? How to measure the impact ?

Which actors shall manage green monitoring on a daily basis ?

Impact on the ATC operators workload ? How to deploy new Green functions within existing infrastructure ?







Agenda

1. CONTEXT & POSSIBLE ACTIONS

2. GREEN OPERATIONS AT THALES

4. Q&A



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Building a future we can all trust

Make Green Operations a reality by 2023

Thales has committed to support a 10% reduction leveraging its expertise on board and on the ground (ATM & Avionics)

Large scale 'Green operations' is the only lever we can activate for short term results Thales approach: Continuous improvement in using digital technologies & agile methodology through a virtuous cycle

A Thales-Wide Green Operations Initiative



Thales Green Ambition

Promote the use of Green performance indicators within all operational phases on a daily basis on 2023

Engage and leverage fruitful collaboration, data sharing & green intention between the stakeholders

Support ANSPs in their decision-making process

Rely on digital tools to provide short term solutions that could be deployed around 2023



FLIGHTS FOOTPRINT

Ecological Footprint Assessment

TO EXECUTE MORE ECO FRIENDLY PROCEDURES





Ecological Footprint Assessment a Process & Tools to Coordinate Stakeholders

TO EXECUTE MORE ECO FRIENDLY PROCEDURES



FLIGHTS FOOTPRINT GREEN FLAG

CLIMATE SENSITIVE AREA

Ecological Footprint Assessment a Process & Tools to Coordinate Stakeholders Predict Contrails Area & Identify Big Hits

TO EXECUTE MORE ECO FRIENDLY PROCEDURES







1. FLIGHTS FOOTPRINT

- A web app & API's to forecast and analyze the impact of flights or segment of a flight on climate
- CO2 & non CO2 performance indicators
- Using multiple sources of inputs: ADS-B, radar, flight plans & airlines' Quick Access Recorder data (QAR)
- Based on the latest research results





Flights Footprint





Overview

Flight Impact KPIs

CO2 / EqCO2 GWP20 / EqCO2 GWP100 / ATR20

Weather & Climate Display

Observe how the weather impacts the flight's climate effects all along the trajectory

Comparison to other flights or theoretical profiles

Vertical & Lateral performance

Observe the impact of a flight profile on the different climate effects

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2. GREEN FLAG

- To set up a cooperation process & tools shared between ATM & Airlines to maximize the use of Green procedures
- To identify dedicated time slots where ATC constraints could be reduced to promote Green operations
- To coordinate the Green intentions from different stakeholders right from the strategical phase





2. Green Flag







3. CLIMATE SENSITIVE AREA

- To predict contrails area
- To identify Big Hits = trajectories generating most of the contrails
- To display sensitive area to the FMP allowing anticipation of actions
- To set up a global climate impact performance indicator relying on CO2 & non CO2





4. DECISION AID

• To provide relevant notifications on Green procedures/clearances to the ATCO

ANSP TRIALS

- To optimize trajectory: CO2 & non-CO2 trade-off
- To prioritize operator actions Vs climate impact drivers

THANK YOU



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