



AVIATION TWIN TRANSITION CLUSTER

A EUROPEAN INITIATIVE FOR A SUSTAINABLE FUTURE

RefMap Clustering Event 2025

Advancing Sustainable Aviation & Urban Air Mobility

APU usage monitoring through AI to reduce emissions and costs

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29–30 July 2025, Athens, Greece



WALTR IN A NUTSHELL

WaltR is a spin-off from the French Space Agency founded in 2018

Our **Vision**: reconciling environmental responsibility and profitability

Our **Mission**: to fight Climate Change and improve Air Quality

Our **Team**: 25 people, multicultural, based in Toulouse, Nantes, Paris, and Berlin.

Our **Expertise**: Remote Sensing Technology & AI to offer Emission Monitoring Solutions that enable our customers to “control and act where it matters” ; Space-Based Data

Our **Investors**:





AVIATION
TWIN TRANSITION
CLUSTER



APU Video ADP





APU : a quick & significant positive impact

WaltR Key Takeaway

Avoidable CO2 = - 255 kg of CO2 per
rotation
Fuel savings = 80 kg per
rotation

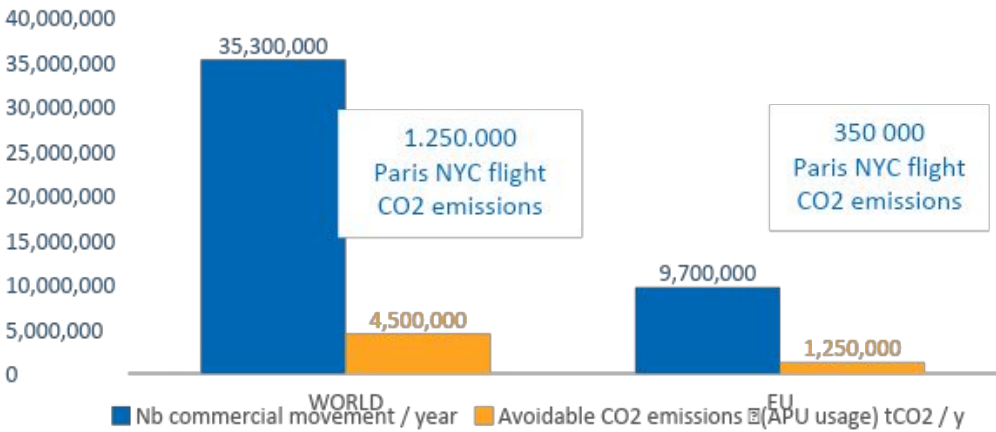
For a short haul ratio of 66%

Paris –
Madrid flight
CO2
emissions
per pax: 278
Kg

Avoidable emissions from APUs based on airport size

	Small	Medium	Large
Number of rotation per year	50 000	100 000	200 000
Avoidable CO2 Emission * APU usage – tCO2 / year	12 750	25 000	50 000

2 years of measurements of 10 aprons in 3 French airports



One way Trip Paris New York (ADEME) : 3.6 tCO2 for an A330 flight

What is the solution for?

APU EMISSION TRACKER



The first operational solution for **APU monitoring** combining **multispectral imaging** and **embedded AI**

- ☒ Edge Computing
- ☒ Real time monitoring of APU at parking stand and Engines on taxiways
- ☒ Associated Green House Gas & Air Quality Emission
- ☐ Other key “ground operations” & “sustainability” indicators accessible
- ☒ Patented technology
- ☒ Certified by ADP Air lab
- ☐ Easy access to data through API



Maximize Performances with AI



Benefit of embedded AI

High computing capabilities in real time

- Multispectral image processing
- Event detection
- Key indicators

Highly reliable data

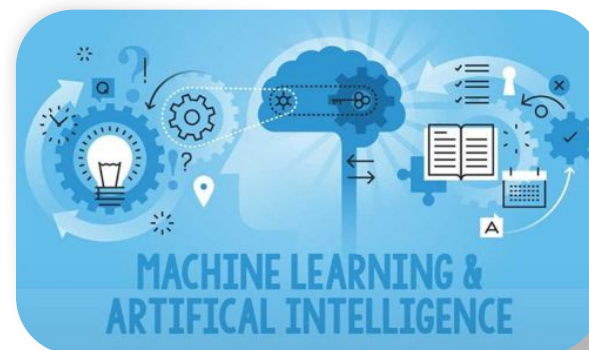
- Continuously enriched learning database with relevant & validated observed data
- 99% + accuracy

Low Carbon AI

- Embedded new generation frugal AI reduces the need in communication, storage and CPU resources
- No GPU used

Secure data

- Local processing
- Only indicators chosen by the airport are uploaded through 4G
- Easy to access by customer through API

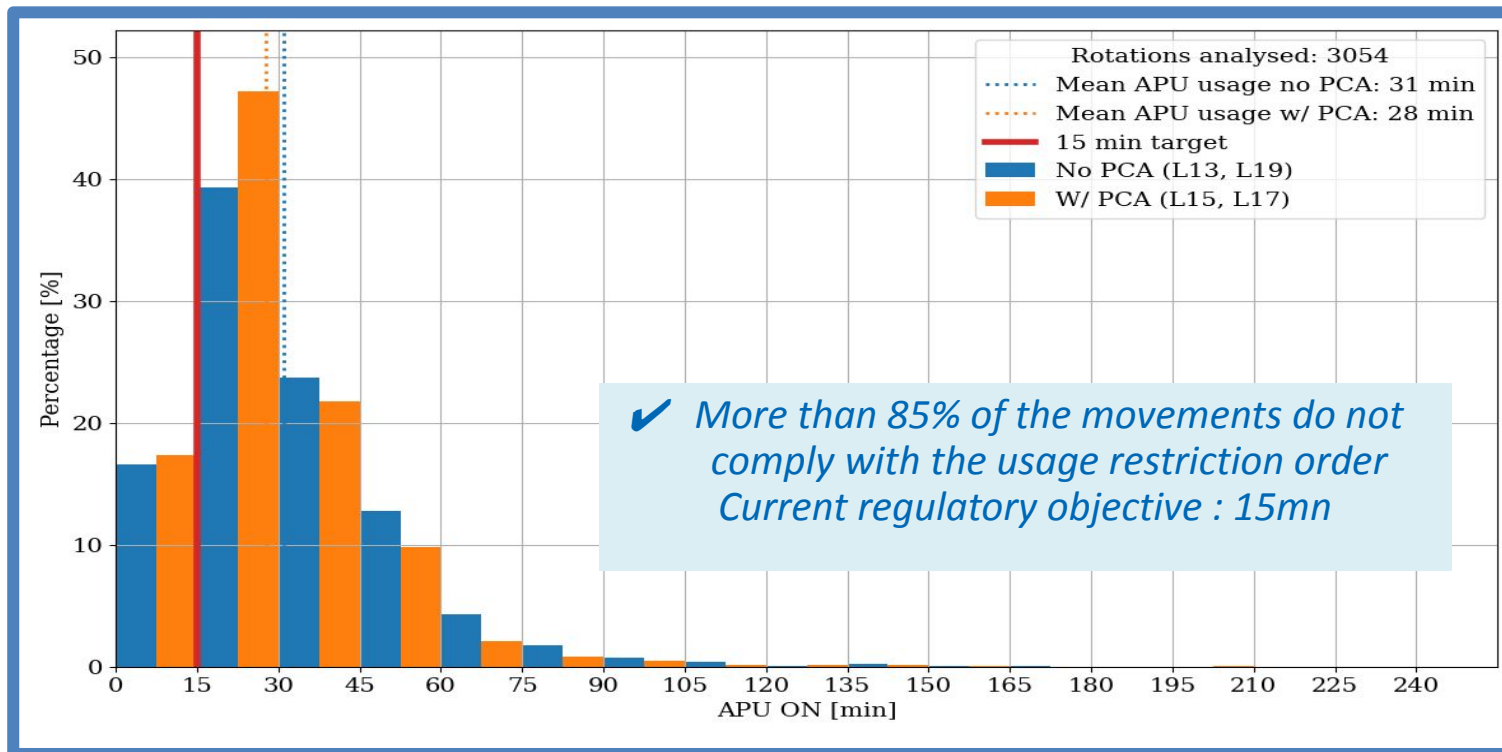


APU ON only when necessary

Reduce environmental footprint

Optimize airport services provided to Airlines

Huge and fast impact

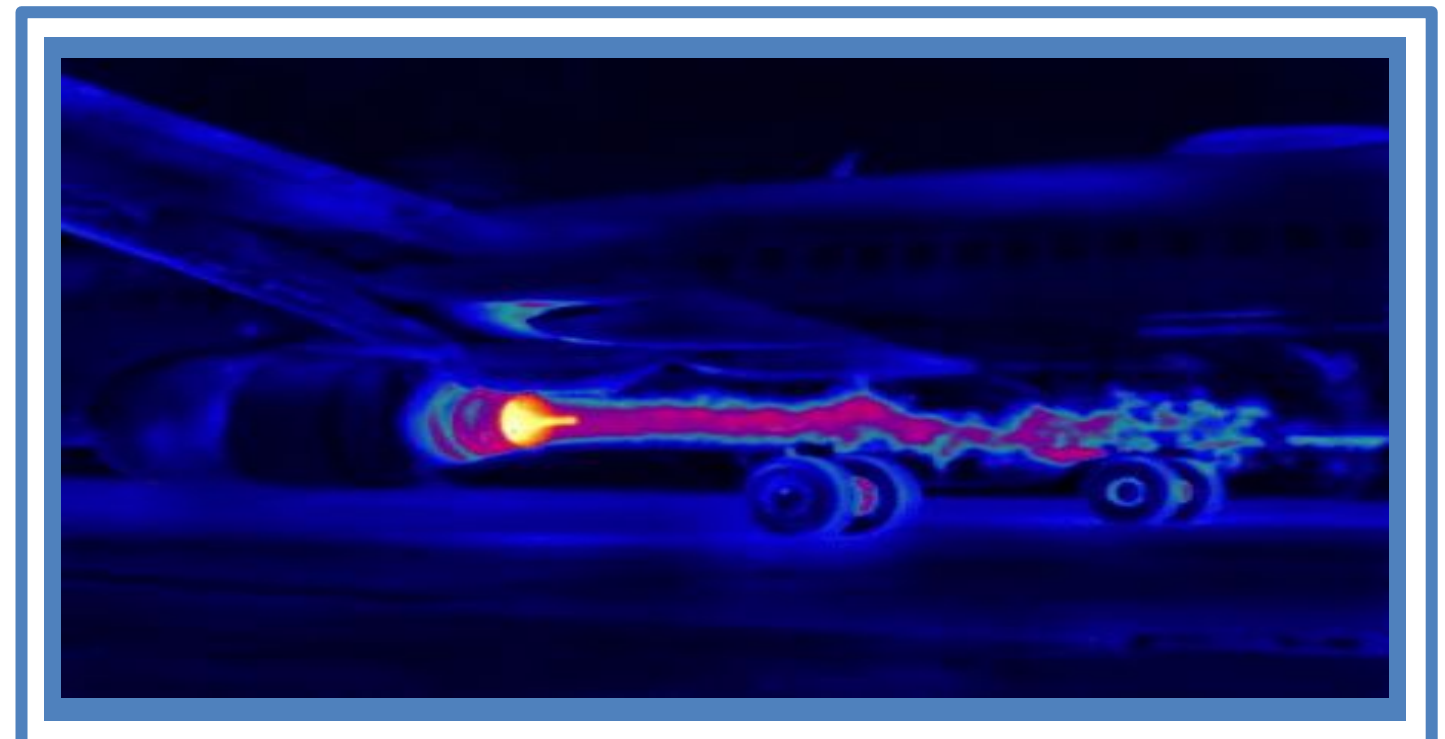


APU on apron	Without PCA	With PCA	Regulation (France)
Average APU usage per rotation	31 min	28 min	15 min
Average CO ₂ emissions per rotation (average over 2 months)	174 kg CO ₂	153 kg CO ₂	84 kg CO ₂
Average CO ₂ emissions per year	7 308 t CO ₂	6 426 t CO ₂	3 528 t CO ₂
Avoidable CO ₂ emissions per year	0 t CO ₂	882 t CO ₂ - 12 %	3 780 t CO ₂ - 52 %
Emissions equivalence (ADEME) Round Trip		498 flights Paris New York	2 136 flights Paris New York

French regulations

On arrival, use of the auxiliary power engine is limited to :

- 15 minutes after the time of arrival at the parking position, when the parking position is not equipped with electricity or air-conditioning/heating substitution, for aircraft with a maximum take-off weight of less than 140 tons.



Strategic advantages for airports



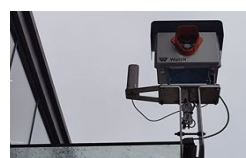
- Maximize PCA Adoption
- Reduce Environmental Footprint
- Optimize Ground Operations
- Support Carbon Assessment & ESG Reporting
- Support compliance assessment with regulation
- Create value for airports & airlines

A solution already tested and validated with airports

January 2023



● Tested
● Validated
By ADP "air lab"



June 2024



● Approved by
VINCI AIRPORTS



February 2025



● Convinced



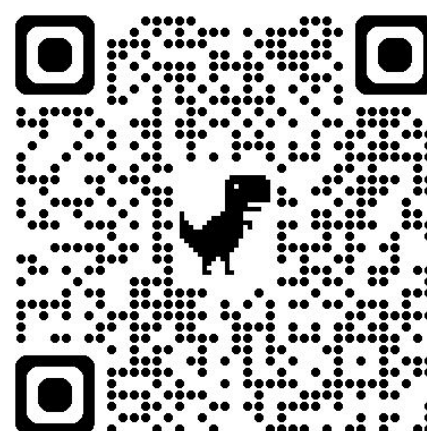
**thank you
for your attention!**



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Head Business Development
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**Q&A /
Closing**





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