Greener en-route
Free Routing in upper airspace, high and very-high complexity

Florence Serdot-Omer (DSNA)

SESAR digital academy

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Free Route Airspace

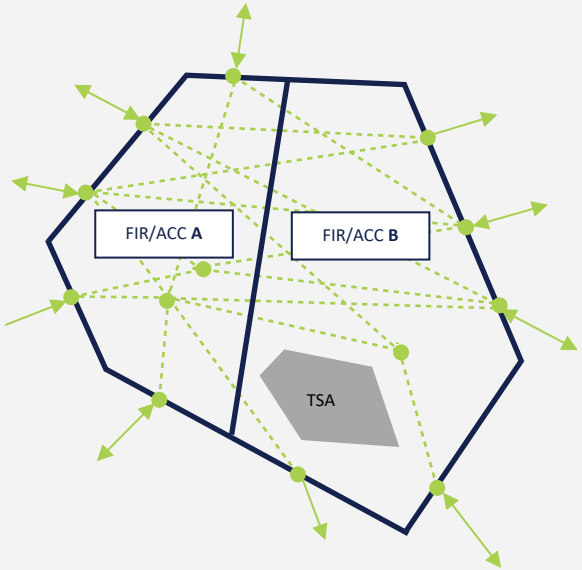
Between a defined entry point
and a defined exit point

With the possibility to route via intermediate
(published or unpublished) way points

Without reference to the ATS route network,
subject to airspace availability

Flights optimisation

SESAR 2020 Wave 1 - ToBeFREE project



A V3 SESAR 2020 Solution ready to move towards industrialisation and deployment

« Optimised traffic management to enable Free Routing in **cross-border high and very high complexity environment** »

- Upper airspace
- ATS systems improvements (FDPS and controllers support tools)

Validation results 1/2

When an adequate FRA structure is put in place and appropriate ATC support tools are available

Improved flight efficiency

- 27 kg less fuel burnt per flight
- 245,000 tons of fuel per year

Reduced CO_2 emissions

- 84 kg less CO2 emission per flight
- 772,000 tons of CO2 per year

No negative effect on airspace capacity and safety

Validation results 2/2

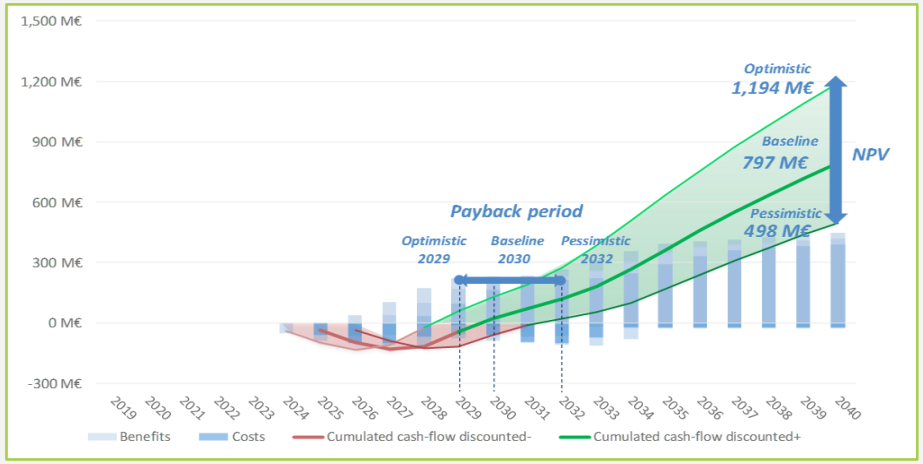
Improved predictability

Less trajectory revision needed during flight

due to optimised trajectory

Cost Benefits Analysis

- **Positive NPV of 797 M€**
- **Payback period of 5 years after commissioning (IOC)**



SESAR 2020 Wave 1 - ToBeFREE project

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...and their Linked Third Parties