

Supporting
European
Aviation



Examples of EO use cases for European aviation

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Aviation environmental impacts



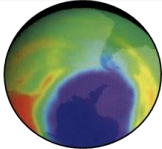



Aviation impacts the environment:

1. Noise,
2. Air pollution,
3. Contribution to climate change.

We need to:

1. Monitor these impacts
2. Put in place mitigation measures.

LOCAL CONCERNS

	Global Emissions Contribution to Climate Change CO ₂ , NO _x , O ₃ , Contrails, ...
	Aircraft Noise (around airport <=10000ft) QoL, Sleep disturbance, Health effects, etc. Noise contours, Population exposed, ...
	Airport Local Air Quality Health effects (CO ₂), CO, HC, NO _x , SO _x , PM, VOCs, ...
	Third-Party risk

Use of Satellite observation/data

1. Atmospheric observation of pollutants

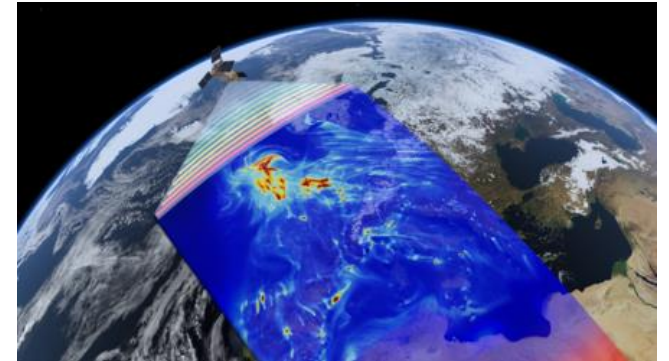
CO₂; NO_x/CH₄/Ozone; Particulate Matter (nvPM, vPM, UFP); SO_x

2. Contrails Monitoring

Anticipate super ice-super-saturated regions where contrails form and evolve into persistent contrails/cirrus-contrails and implement avoidance measures.

3. Land Use Planning

To monitor the population living around airports, exposure to noise levels, third party risk exposure and impact on biodiversity



Impact of climate change on Aviation operations



1. Long-term Extreme weather events

- Changes in wind patterns/intensity
 - *Impact transatlantic flight routings and duration*
- Sea level rise - global mean temperature rise
 - More than 270 coastal or low-lying airports in the ECAC region



2. Short-term Extreme weather events

- **Storms; lightning**
 - *Arrival and en-route ATFM delays, increased costs*
- **Heat waves**
 - *Decreased aircraft take-off performance*
 - *Changes in tourism demand*
- **Heavy precipitation (rain/snow/hail)**
 - *Disruptive events and delays (e.g. icing of aircraft or runways)*



Thank you for your
attention!