

## SCARBOn Team

SCARBOn project, implemented by a diverse consortium of 10 organisations from 6 EU Member States, including scientific institutes and SMEs, is led by Airbus Defence and Space, Toulouse (France).

### Spain



### Netherlands

AIRBUS

### France

AIRBUS

ABSOLUT  
SYSTEM



ONERA  
THE FRENCH AEROSPACE LAB

UGA  
Université  
Grenoble Alpes

### Germany



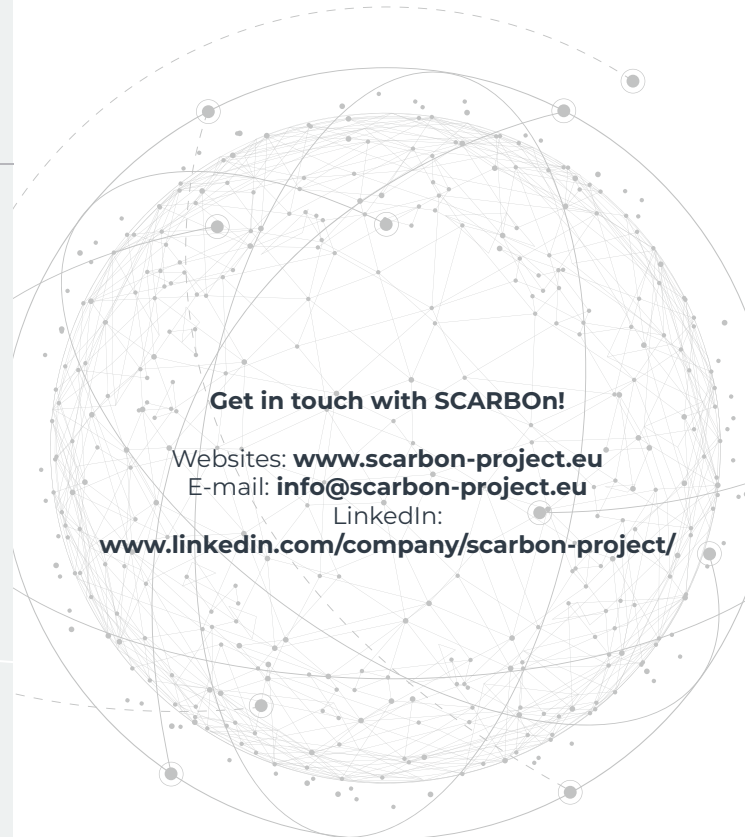
### Czech republic

GRANT GARANT

### Belgium



## Innovation project funded under the EU Horizon Europe Programme



Get in touch with SCARBOn!

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# SCARBOn

SPACE CARBON OBSERVATORY **next step**



**Space-Based Monitoring of CO<sub>2</sub>  
and CH<sub>4</sub> with High Accuracy  
and Twice-Daily Revisits**

## About SCARBOn

- SCARBOn (2024-2027) is an innovation project funded under the EU Horizon Europe programme and coordinated by Airbus Defence and Space SAS
- A 100% European collaborative initiative developing a satellite system of greenhouse gas (GHG) emissions monitoring
- A successor to the EU Horizon 2020-funded SCARBO project, which laid foundations of the innovative technology: constellation of small satellites carrying NanoCarb and SPEXone instruments

## SCARBOn Goal: Road to Maturity Increase

- 1 Technical and industrial definition of NanoCarb instrument.
- 2 End-to-end Concept validation of GHG point sources monitoring by science data retrieval chain simulation, from raw instrument measurements up to fluxes estimation.
- 3 Upgraded NanoCarb Prototype demonstration by airborne campaign.
- 4 Optimisation of the constellation Concept by adding autonomy and configurability to the mission, addressing short-term industrial implementation, as well as end-to-end system performances optimisation carrying the GHG monitoring instrument.

## SCARBOn Technology

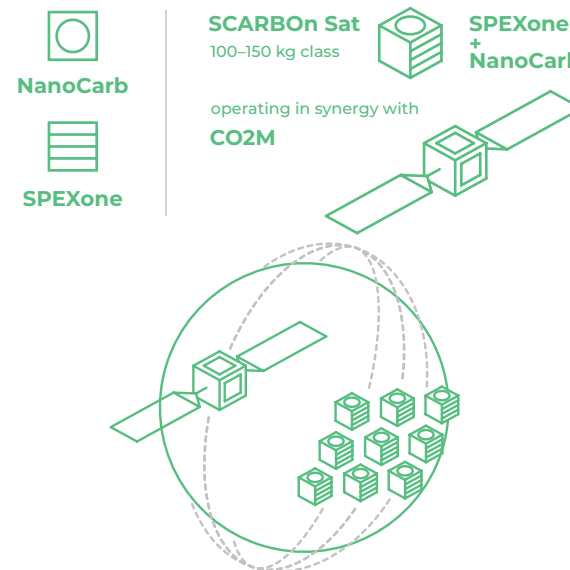
SCARBOn develops a conceptual formation of small satellites, aiming for an embark in 2030, that will provide twice-daily accurate measurement of GHG concentrations (namely CO<sub>2</sub> and CH<sub>4</sub>) in the Earth atmosphere. Measurements are enabled by two small-sized instruments:

### NanoCarb

A miniaturized static spectrometer designed to detect CO<sub>2</sub> and CH<sub>4</sub> with unprecedented accuracy.

### SPEXone

An already developed compact aerosol sensor that helps to correct atmospheric scattering effects, enhancing the precision of GHG measurements.



**Complementary to the Copernicus Sentinel Mission (CO2M), dedicated to CO<sub>2</sub> measurement, the SCARBOn constellation of small satellites can revisit sites twice a day and obtain reliable data of both CO<sub>2</sub> and CH<sub>4</sub> emissions.**

## SCARBOn Impact

**Supporting European Climate Change Mitigation Efforts.** SCARBOn's technology aims to provide crucial data for evidence based policies.

**Fostering Development of Value-Added Services.** The mission's data would facilitate the emergence of new services, such as advanced analytics for carbon management and environmental compliance.

**Boosting European competitiveness in space observation capacity.** Together with the European Space Agency's CO2M mission, Europe's strategic autonomy in space-based environmental monitoring technologies will be ensured.



Find out more about SCARBOn at  
[www.scarbon-project.eu](http://www.scarbon-project.eu)