



29th April 2022

EARSC Statement Regulation on Certifying Carbon Removals

The European Association of Remote Sensing Companies ([EARSC](#)) is a trade association based in Brussels, representing the Earth Observation downstream services sector. EARSC counts more than 135 members across 25 countries in Europe.

EARSC welcomes the regulation on Certifying Carbon Removals and fully supports the initiative of the European Commission to provide more clarity on the quality of carbon removals and ensure their environmental integrity by proposing a regulatory framework for the accounting and certification of carbon removals by the end of the year.

This statement provides an introduction to how the Earth Observation (EO) sector can and is currently supporting the carbon removal challenges and the applied methodologies. To reach net zero emissions by 2050¹, the European Commission estimates that EU greenhouse gas emissions would need to drop by 85-95% compared to 1990. Therefore the use of digital solutions is vital for meeting the climate targets. Earth observation services derived from EO data, such as the satellite data coming from the European flagship programme [Copernicus](#)², will be key for planning, verification and monitoring of carbon capture projects.

Earth Observation provides a continuous, objective, and global supply of data. By combining remote sensing data with measurements from ground-based instruments and other technologies such as artificial intelligence and machine learning, it is possible to have a wide

¹ 2050 long-term strategy (https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_en)

² Copernicus programme: Copernicus is the European Union's Earth observation programme coordinated and managed by the European Commission in partnership with the European Space Agency, the EU Member States and EU agencies. It aims at achieving a global, continuous, autonomous, high quality, wide range Earth observation capacity

range of applications and services. See Annex 1 for a visualization of the different use cases. We have detailed below a handful of key use cases:

Use case 1: Urban Green Spaces

Knowledge about sequestered carbon is particularly important in urban areas, where the concentrations of contaminants are elevated. In addition, international agreements such as the Covenant of Mayors manifest the commitment of local governments to implementing EU climate and energy objectives. **Thus, the EO industry is currently helping the different municipalities in reporting accurately the capacity of their green urban spaces, e.g., trees, parks, forests, green roofs, wetlands, residential gardens, etc., to remove carbon and improve the air quality.**

Use Case 2: Validation and Monitoring of Nature-based Carbon Capture Projects

There is a growing demand for nature-based carbon capture projects. These include agroforestry projects that add trees to existing farmland or afforestation projects that restore forests. Many of these projects are funded by selling carbon credits. To ensure that these credits are valuable, standards define criteria for measuring carbon sequestration. Currently, the methods for verification require extensive in-field measurements. The cost of these in-field measurements means that fewer projects, in fewer locations are started. The high cost can also lead to verification being performed inadequately. The EO industry can reduce the cost of launching projects and increase the quality by using satellite data to map and model the carbon captured. This can be done by using a small set of ground truth data to train models that use satellite data to predict the biomass of all the trees in the project. **EO services can provide more economic, reliable, and frequent validation for carbon capture projects.**

Open source, freely available data is at the center of these efforts and can be complemented by commercial datasets. Upcoming satellites in the Copernicus program including third party missions will enable new technologies that will help in meeting the climate targets.

Earth observation data plays a key role in the development of carbon capture, storage, and sequestration services. Consequently, EARSC believes that the regulation on certifying carbon removals should specify that services built on Earth Observation data publicly or privately are operational solutions, which shall be used for carbon reduction and capture practices to upscale this green business model that rewards companies for carbon sequestration. EARSC remains at your disposal to work together on this objective.

Annex 1

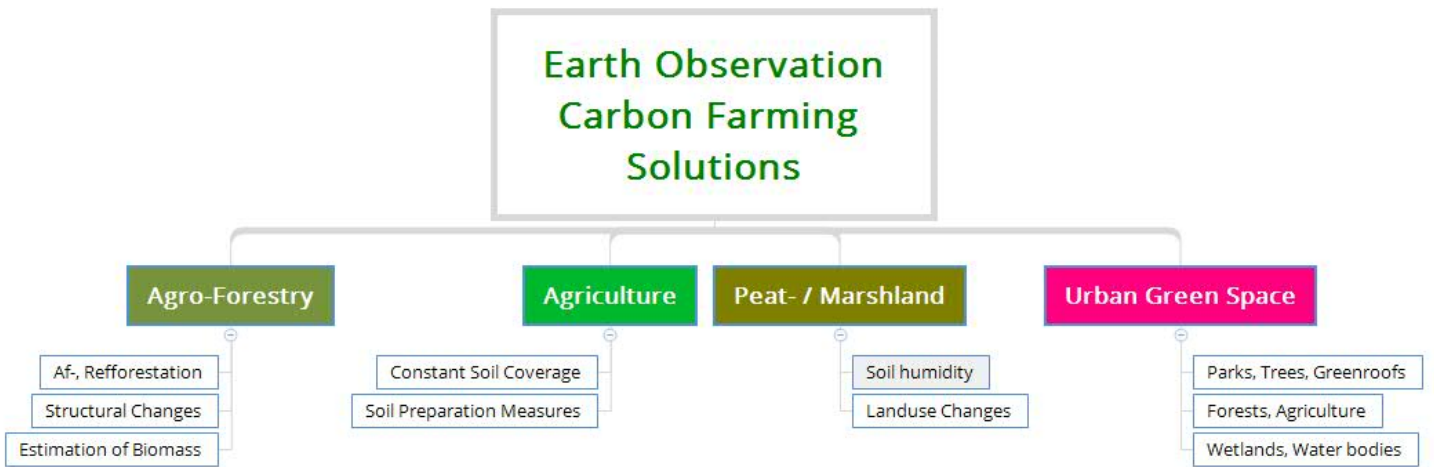


Figure 1: Earth Observation Carbon Farming Solutions Mind Map

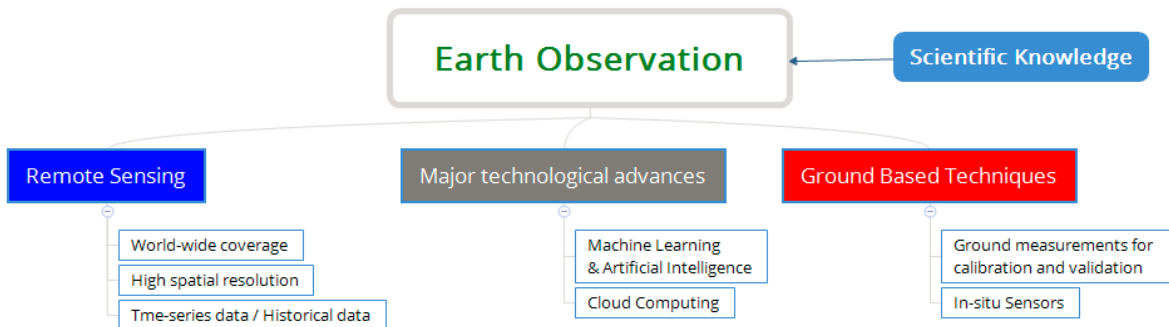


Figure 2: Earth Observation Diagram