

# FCA Hackathon – Winning Submission Summary

## **Background.**

Perhaps the primary that companies are reducing their net carbon is via carbon offsetting - investing in programs that store more carbon than they emit, which offsets the pollution their business produces. Examples include reforestation, renewable energy, and direct air capture. This approach is growing - analysts estimate the carbon offset industry will be worth \$200 billion by 2050.

As with any pivotal industry, the emergence of carbon offsetting has come with significant pain points. The market is almost totally unregulated and unverified, resulting in manipulation and fraud - banks invest in reforesting projects that never plant a single tree, the same parcels of land are sold to multiple companies, or renewable energy projects produce less green electricity than they originally promised.

The entire industry is opaque, so it is difficult for regulators to confirm that financial authorities are committing to their goals and for the public to fully trust their green credentials. Something must be done to add transparency and certitude to the carbon offset market.

To solve this issue, we proposed DeCO - a platform that provides independent verification for companies' carbon offsetting projects. In a nutshell, we audit companies' carbon offset schemes to ensure that they are producing the environmental benefits they are claiming or were told about.

There is a huge amount of value available for businesses as part of this program. Our verification platform will improve brand reputation and substantiate green credentials. It will give consumer confidence to green branding, protect against greenwashing, and allow businesses to expand into the sustainable financial products marketplace with the confidence of substantiation by an independent body.

We monitor carbon offset schemes using primarily satellite imagery but also with drones and IoT devices. Given the extent of free satellite imagery, the ability for satellites to monitor anywhere on earth, and their easy scalability, geospatial data is a perfect method for our use case. We will use these sensors combined with artificial intelligence and automated feature extraction to monitor huge areas quickly and sustainably.

## **How can satellite data promote transparency and confidence in sustainable investments?**

The Woodland Carbon Code is a government backed scheme promoting transparency in ESG reporting by allowing companies to register their carbon sequestration schemes in a publicly accessible database. By taking geolocation information from this database, and utilising freely available sentinel-2 satellite imagery, we can remotely monitor forest carbon projects throughout the UK on a weekly basis. Factors such as forest health and coverage can be easily assessed and by leveraging AI technologies these processes can be automated allowing independent verification of carbon offsetting within the UK on a national scale.



**Satellite monitoring of a forest plantation**

## **Outcome**

There is a strong desire within the finance sector to encourage investment in sustainable products and this can be achieved by bringing trust and transparency to the carbon marketplace. With the number of unregulated schemes growing exponentially, remote monitoring offers the perfect solution. With Ordnance Survey's reputation as a geospatial leader, and expertise in automatic change detection, we are in prime position to collaborate with regulators to develop these technologies to help create a sustainable future.