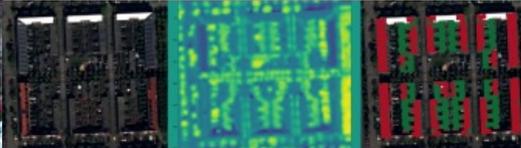


Copernicus Data and AI to Combat Climate Change



Europe's Earth observation programme Copernicus provides open access to up-to-date information on topics such as climate and land management. Such data holds huge potential for companies, entrepreneurs and start-ups to develop new solutions to tackle global challenges. Green City Watch combines big data from space with artificial intelligence (AI) to measure the quality of urban green space.



This pioneering technology was honoured as the 2019 Overall Winner of the international innovation competition [Copernicus Masters](#) during its Awards Ceremony on 4 December in Helsinki, Finland.

According to research published by the United Nations Office for Disaster Risk Reduction in October 2018, extreme weather events already account for 91% of all major disasters and 77% of recorded economic losses from natural disasters. Our climate is changing because of different factors influencing Earth as a whole. Earth observation satellites provide unique information that greatly assists in the understanding and management of climate change.

Multispectral and SAR imagery

Urban green space can store huge amounts of CO₂. The 2019 Copernicus Masters Overall Winner [Green City Watch](#) can quantify the CO₂ uptake of urban green spaces globally as well as identify and monitor ecological improvements to parks, which even increase CO₂ sequestration. By combining ecological science and high-resolution satellite data with machine learning and AI, Green City Watch provides actionable insights into green spaces to municipalities and other urban green space managers, including real estate developers and landscape architecture firms, faster and more efficiently than ever before. Green City Watch relies on satellite data from [Sentinel-2 MSI](#) (MultiSpectral Instrument) for vegetation analytics, [Sentinel-1](#) SAR imagery to assess urban flood risks, Planet's SkySat, RapidEye, and ±2x daily revisit times to map illegal tree removal and much more. Together with cities, Green City Watch is tackling green space management head-on, sketching out concepts, and reducing the turnaround time required to get ideas implemented.



Green City Watch project: Accurate roof area quantification in Amsterdam.

"The Copernicus Masters has proven to be an excellent example for boosting economic growth and tackling global challenges for our planet," stated Jan Wörner, ESA's director general, at the Awards Ceremony in Helsinki. "I am proud that this innovation competition is always one step ahead in addressing the latest state-of-the-art topics, with this year's winning solutions now focusing on AI and other disruptive Earth observation technologies of the future."

Deal flow generator

[Five more Challenge winners](#) were recognized during the Awards Ceremony by high-ranking industry and institutional representatives, such as the [European Space Agency](#) (ESA), the German Aerospace Center ([DLR](#)), [Planet](#), [BayWa](#), [Astrosat](#), [Airbus](#) and [sobloo](#), the German Federal Ministry of Transport and Digital Infrastructure ([BMVI](#)), and [AZO Anwendungszentrum](#) Oberpfaffenhofen, the organizer of the Copernicus Masters.

"The Copernicus Masters functions as a deal flow generator for Copernicus," explained Thorsten Rudolph, CEO of AZO. "With the competition, we have managed to establish a new market for 'big data from space' in Europe and trigger a startup boom with more than 100 young EO companies already. In the 2019 edition of the Copernicus Masters, 432 participants submitted 182 new EO business cases from 52 different countries."



Green City Watch project: Wildlife corridor mapping for the City of Sydney. From left to right: distance to habitat (darker is closer to habitat), suitable species habitats in dark green, NDVI, satellite image with corridor options overlay in green.

Driving entrepreneurial talent

Copernicus Masters is an international innovation competition with the objective to drive entrepreneurial talent and new business models that are needed to build up EO data into sustainable services for a wide variety of industries. Many industries and areas of public interest benefit from the progress of the Copernicus programme. Innovative technologies such as cloud computing, machine learning and artificial intelligence (AI) support the objective to efficiently and meaningfully process these large amounts of digital data. The close cooperation of the Copernicus Masters with institutional, industrial and regional partners promotes the development of high-tech products and services for Europe on a global scale.

The 2019 Copernicus Masters Awards Ceremony took place as the festive highlight of the European Space Week 2019 in Helsinki, Finland. Next year's Copernicus Masters submission phase will start on 1 April 2020.

<https://www.gim-international.com/content/news/copernicus-data-and-ai-to-combat-climate-change>
