CANDELA a research project to promote and explore Copernicus data use

The Copernicus EU programme, sometimes referred as the "Europe eyes on earth[1]" develops European information services based on satellite Earth Observation. Copernicus monitors and forecasts the environment on land, sea and in the atmosphere, to support climate change mitigation and adaptation strategies. **Copernicus offers free-accessible operational data and information services** that provide users with reliable and up-to-date information related to environmental issues.

CANDELA is a research project that stands for "**Copernicus Access Platform Intermediate Layers Small Scale Demonstrator**" and has a 1.9M€ of EU funding under the Research and Innovation action from the Horizon 2020 program. The project is enriching the Copernicus ecosystem and investigating using novel techniques. Partners from academia, research institutions, SME's and IT companies are working together with the overall aim to offer a platform who delivers building blocks and services to enable users to **quickly use, manipulate, explore, and process Earth Observation data**.

CANDELA is a platform that allows easy access, operation and exploration to all Copernicus data and information on the Earth Observation ecosystem. It provides easy access to all Copernicus data to the scientific community, entrepreneurs, developers and the general public who wish to process the data to provide their own Copernicus based services. One of the main objectives of the project is to allow the creation of value from Copernicus data through the provisioning of modeling and analytics tools given that the tasks of data collection, processing, storage, and access are provided by the **Copernicus Data and Information Access Service (DIAS)**. CANDELA platform bridges the gap between big data technology and the Earth Observation data user community.

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[1] According to Mauro Facchini, Head of the Copernicus Unit at the European Commission

CANDELA is designing, implementing and validating algorithms related to **crop health** and **yield assessment** at a national level, and **urban development** at a regional level. The project will also probe the value of remote sensing data collection for the monitoring of **forest health** conditions.

Four main blocks of tools are being developed in CANDELA:

- Earth Observation (EO) **data mining** for classification and change detection.
- Deep Learning for **change detection** on time series for optical and radar Earth observation data.
- **Semantic search** and indexation of EO and non-EO data.
- **Data fusion** techniques to merge pre-processed data that came from various sources.

The platform to access Earth Observation data in an easy and accessible way and facilitates the access of data and above all its manipulation because CANDELA takes care of what's inside the data thanks to these mentioned tools. CANDELA offers modular "dockerised" services facilitating the scalability and transferability of these. At the same time enriches the Earth Observation ecosystem and allows co-creation of services based on EO data.

The coordinator, Jose Lorenzo from Atos Spain says:

"CANDELA is ready to provide a powerful platform that can bring scalability to any DIAS with promising analytics tools".

CANDELA team is a consortium, consisting of **seven partners from five European countries**: Atos Spain and Atos France, along with Thales Alenia Space (France and Italy), the German Aerospace Center (Germany), the Institut de Recherche en Informatique de Toulouse (IRIT), (France), CloudFerro Sp. z o. o. (Poland), TerraNIS SAS (France), and SmallGIS Ltd (Poland).

For more information on CANDELA, please contact the coordinator: Jose Lorenzo

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- Web: http://candela-h2020.eu/
- Twitter: Candela Project
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