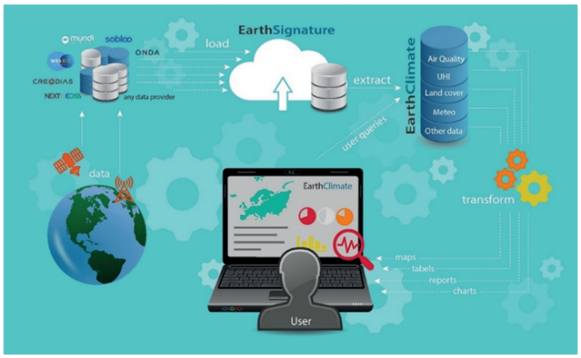
This project has received funding from the European Union's Horizon2020-SPACE-2019 innovation action programme under grant agreement No 870373

EarthClimate

ASSUMPTION

Climate monitoring is a fundamental part of governments and decision-makers who need to understand its evolution and effects in order to define and implement appropriate adaptation and mitigation policies, which involve investments at long term. Many monitoring hot topics are concerned, such as: urban heat islands, flood risk due to extreme climate events, adaptive integrated spatial planning of lands in the cities, air quality and carbon dioxide emissions, etc.

DESCRIPTION



EarthClimate pilot is proposed in the frame of the SnapEarth project and has the ambition to tackle the above--mentioned issues by delivering value-added services to support urban climate monitoring activities. EarthClimate will simplify the use of climate-related EO data, it provides data, tools and services, tailored to the needs of the citizens, planners and decision-makers, enabling informed decision making.

EarthClimate Pilot will offer **3 different data analysis services** in 22 areas of Europe related to:

- **Air quality monitoring** - presenting the air quality situation in Europe, based on data from Copernicus Sentinel 5P;
- **Urban Heat Map** - providing maps that select places with surface temperature distribution;
- **Weather and allergens** - which allows automatic downloading of forecasts of: weather, pollutants and allergens from Copernicus Atmosphere Monitoring Service (CAMS).

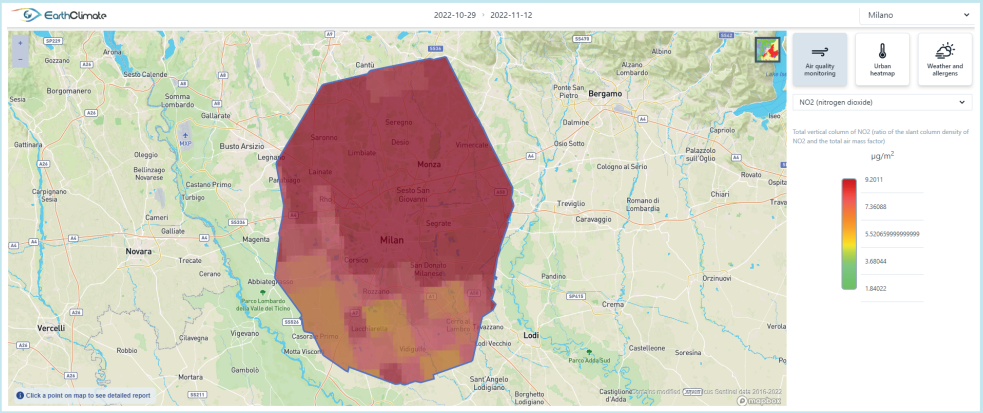
WHO IS THE SERVICE DEDICATED TO?

Our pilot is mainly dedicated to small and medium-sized enterprises and start-ups that deal with the subject of air quality and city monitoring, as well as for public administration. However, the service will be available to anyone interested.

FUNCTIONALITY

EarthClimate will be a paid service that runs as a web browser. Pilot was created to meet the growing need for city monitoring in its various aspects. Satellite data gives the possibility of constant monitoring without a large financial outlay. Data for EarthClimate is based on satellite images the constellation of Sentinel satellites.
Thanks to EarthClimate Pilot, it will be possible to access ready-to-use EO data in 13 variants:

- **Air quality**: Aerosols (AER AI), Methane (CH4), Carbon monoxide (CO), Nitrogen Dioxide (NO2), Formaldehydes (HCHO), Ozone (O3), Sulfur Dioxide (SO2).
- **Urban Heatmap**: ground temperature
- **Weather and allergens**: Carbon monoxide forecast (CO), Nitrogen Dioxide forecast (NO2), Ozone forecast (O3), Atmospheric aerosols forecast (PM 2,5), Sulfur Dioxide forecast (SO2).



For each of the variants, it is possible to read current and historical data from a pixel and present them in the form of graphs, as well as download these data in 3 different formats (SVG, PNG, CSV).

PILOT DEVELOPMENT

As part of the development of EarthClimate, it is planned to expand the service to new areas in Europe and beyond (mainly those designated by customers) and to expand the database with new services.
EarthClimate Pilot is only part of SnapEarth services, it is connected to services such as the EarthSignature platform where additionally use the land use/land cover data from EarthSignature database. In the future, an interactive connection between EarthClimate services and EarthSignature is foreseen (selecting specific data from different types of land cover/ land use).