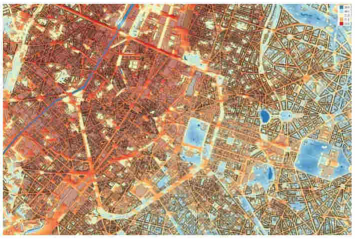
Heat stress challenges

Extreme heat events are increasing in frequency and intensity across Europe, posing serious risks—especially in urban areas. Human-made modifications like dense infrastructure, use of asphalt and pavements, and limited green spaces intensify the phenomenon of 'urban overheating,' exacerbating health risks. Understanding the causes, timing, and effects of heat stress is essential for developing targeted adaptation strategies.



Daily mean Wet Bulb Globe Temperature during a heat wave day in the city centre of Brussels

User Engagement

A collaborative, city-focused approach to identify needs and priorities of local and regional authorities - working closely with leading city networks:

- **Climate Alliance**
- **Eurocities**
- **ICLEI**
- **Resilient Cities Network**

These networks play a crucial role in promoting the service to their member cities, enhancing its scalability and ensuring its long-term adoption

Service Design

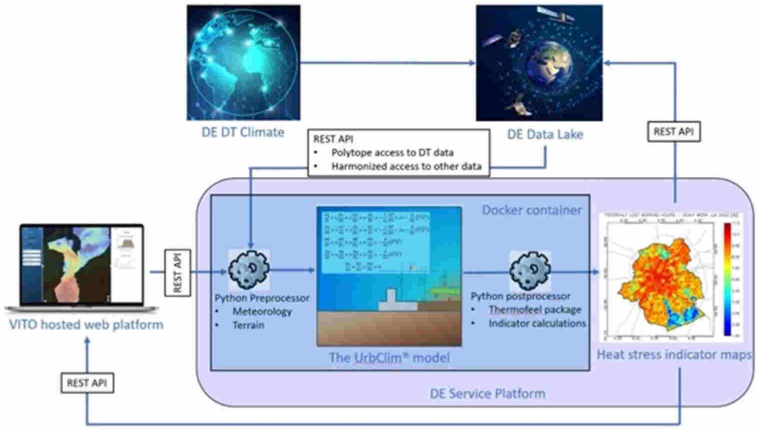
This service is co-designed based on insights from the user engagement process, guiding its definition, development and delivery.

The goal is to provide users with comprehensive, actionable insights by:

- Assessing current and future **heat-related risks' hazards** and its **impacts** on human health and/or labour.
- Evaluating the effectiveness of **targeted adaptation strategies**, such as planting trees, adding vegetation on roofs or materials that reflect solar radiation, soil unsealing, incorporation of water features or changing colour of buildings.

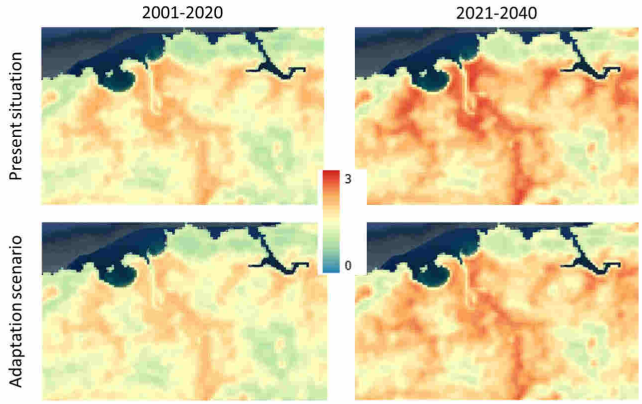
Pilot Service Implementation

The Pilot Service will be integrated in the **Destination Earth's Service Platform (DESP)** and will leverage the power of Destination Earth's Data Lake (DEDL) by collecting climate and land use data to simulate current and future climate conditions and provide highly accurate data and actionable insights to inform urban climate adaptation strategies.



Initial key features include:

- 100-meter resolution city-wide urban climate and impact indicators.
- 1-meter resolution detailed assessments of selected sub-areas, allowing for precise neighbourhood and street-level analysis.
- The service will provide a range of indicators, such as number of tropical nights, exposure to heatwaves, heat-related mortality, lost working hours due to heat stress (based on ISO standards), etc.



Number of heat alert risk days per year in San Sebastian – considering a 20% increase in green infrastructure in the urban area.

Get in touch!:

If you want to contribute to the evolution of this Pilot Service or dive deeper into future steps: scan the code to connect with us!

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