
PRESS RELEASE

An urban digital twin combatting heat islands and flooding: e-GEOS at the helm of the European project

Rome, December 4th, 2024 - e-GEOS (Telespazio 80% and ASI 20%) is Prime Contractor of the consortium commissioned by the European Space Agency (ESA) to develop a **digital twin for the simulation of heat island and urban flooding scenarios**. The project, called "**SURE**" (Smart Urban Resilience Enhancement), began on 6 November.

The project will be developed by a consortium led by e-GEOS and composed of Politecnico di Milano (POLIMI), Luxembourg Institute of Science and Technology (LIST) and Stefano BOERI Architetti, with external services provided by the Czech Academy of Sciences, Institute of Computer Science - Department of Complex Systems.

Digital twins are virtual reproductions of the Earth, its environments and the dynamics of territories, allowing people to **monitor the health of the Planet**. Through simulation scenarios based on satellite data, they can **provide information supporting emergency response in the event of extreme weather events**.

The SURE project integrates multi-platform data from remote and close-range sensing with in-situ information for the development of two digital twins for urban environments, focusing on heat islands and on urban floods. Urban digital twins offer a powerful tool for understanding, simulating and undertaking data-driven decision-making processes, with the ultimate goal of studying solutions for **mitigating the impact of climate change in urban areas**.

The **phenomenon of urban heatwaves or EHE – Extreme Heat Events** - refers to localised temperature increases in urban areas compared to surrounding rural areas. Urban digital twins permit a **better understanding of the factors that contribute to temperature change, identify vulnerable areas and develop actions mitigating thermal stress**.

Urban Floods (UF) can cause significant damage to infrastructure, disrupt transport networks, and pose a risk to public safety. Use of a digital twin adapted to understand such incidents will allow the SURE project to **simulate a variety of rainfall scenarios, assess flood risk levels and come up with strategies for improving resilience and response capabilities**.

"We are excited to lead the European Space Agency's new 'SURE' project. With its cutting-edge know-how and highly specialised resources, the consortium will develop digital twins capable of improving the quality of life of all citizens. With this assignment, e-GEOS confirms itself as a leader in the development of Earth Observation solutions for climate change resilience. We wish to the whole consortium good luck in their work!"
- said **Milena Lerario**, CEO of e-GEOS.

The urban digital twin will be integrated into the DestinE Core Service Platform (DESP) of Destination Earth, the European Commission's initiative for developing highly accurate digital model of the Earth on a global scale.

ABOUT e-GEOS

e-GEOS, an ASI (20%) / Telespazio (80%) company, is a global leader in delivering applications and services through highly technological and innovative Geoinformation platforms based on Artificial Intelligence and cloud technology. e-GEOS offers a unique portfolio of application services, from data acquisition to analytical report generation, also thanks to its optical and radar capabilities and fast access to the superior monitoring capabilities of the first- and second-generation COSMO-SkyMed constellation (by Italian Space Agency and Italian Ministry of Defence), of which e-GEOS is the exclusive distributor worldwide. e-GEOS manages the Matera Space Center for the acquisition, storage and processing of multi-mission satellite data. The Center is one of the stations of the Core Ground Segment of Copernicus and receives radar data acquired by Sentinel-1 mission.

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