

Partners

The consortium brings together leading European research and academic organizations, the Earthquake Planning and Protection Organization of Greece (EPPO) and the Region of Western Greece as institutional public partners, along with an innovation cluster that bridges scientific research and technological innovation.

The coordinator is the University of Patras (Greece), with key partners including the Istituto Nazionale di Geofisica e Vulcanologia (Italy), ETH Zurich (Switzerland), the National and Kapodistrian University of Athens (Greece), the Institut de Physique du Globe de Paris (France), the National Observatory of Athens (Greece), the University of Naples Federico II (Italy), the National Institute for Earth Physics (Romania), the Charles University (Czech Republic), the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy), the Bogazici University (Turkey), the Pleiades IoT Innovation Cluster (Greece), the Wroclaw University of Environmental and Life Sciences (Poland), the Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU, Slovenia), the University of Trieste (Italy), the Earthquake Planning and Protection Organization (Greece), and the Region of Western Greece.

Each partner contributes expertise in earthquake monitoring, sensor development, real-world application of new tools, and civil protection.

Contact

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The views and opinions expressed in this document solely reflect the position of the TRANSFORM² project.



TRANSFORM²

Towards Advanced Multidisciplinary
Fault Observatory Systems



www.transform2-project.eu



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the European Union

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Overview

The TRANSFORM² project marks a new era in earthquake monitoring and understanding by modernizing Near-Fault Observatories (NFOs) with cutting-edge technologies. By combining innovative seismological, geodetical and geochemical sensors with advanced workflows assisted by Artificial Intelligence (AI) methodologies, the project aims to collect a new generation of multidisciplinary data and analyze it with innovative technologies. This will allow researchers and authorities to gain a clearer picture of how earthquakes initiate and evolve. At the same time, the project emphasizes open data availability, ensuring that knowledge is shared with the wider scientific community while also supporting civil protection agencies to strengthen preparedness and resilience in our societies.



Why the Project

TRANSFORM² was designed to address the need for a better understanding of seismic risk near fault zones. While Europe already has important monitoring infrastructures, new technologies are required to improve the resolution, accuracy and speed of data collection and processing. The project seeks to fill this gap by upgrading Near-Fault Observatories with innovative tools accessible to both researchers and civil protection authorities.

What We Do

Within TRANSFORM², we combine advanced sensors with AI techniques to build a comprehensive monitoring ecosystem. We test and exploit Distributed Acoustic Sensors (DAS), seismometers on optical fibers for harsh environments, geodetic, optical strain meters, rotaphones, geochemical detectors, while also creating automated data processing workflows powered by AI. These technologies are tested in real-world conditions and integrated into earthquake early warning systems, enhancing the ability to respond rapidly.

Impact

The impact of TRANSFORM² goes far beyond academic research, reaching the very core of everyday safety for citizens. Through more reliable data, faster analysis, and integration into earthquake early warning systems, the project contributes to effective seismic risk management and mitigation. At the same time, it builds a collaborative ecosystem that connects research institutions, civil protection authorities, and industrial partners, fostering innovation and paving the way for new services. TRANSFORM² is not limited to its project timeline. By developing the new generation of sensors and methods for fault observatory systems, this project lays the foundations for sustainable infrastructures and practices that can be adopted at the European and international level, ensuring that technological investments translate into tangible benefits for society.

