EGU25-20014, updated on 07 May 2025
https://doi.org/10.5194/egusphere-egu25-20014
EGU General Assembly 2025
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DTEClimate: A Digital Platform for Real-Time Geospatial Intelligence and Climate Monitoring

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Geospatial intelligence involves the analysis and interpretation of spatial data to inform decision-making. Understanding and responding to geospatial phenomena, such as seismic events or atmospheric disturbances, is essential for advancing disaster preparedness and environmental monitoring. However, significant challenges arise from the lack of integrated systems capable of securely collecting, processing, and analyzing large-scale geoscience data.

To address this, the "Digital Twin Earth Intelligence for Climate Changes" (DTEClimate) project has developed a platform that integrates real-time data gathered from various sensors, to create visual maps, easily accessible for the general public. In order to process all this data, integration services have been developed, which continuously monitor and process data gathered by sensors. This stored data is then used to create multi-layered maps representing various event types and heatmaps illustrating data concentrations.

On the one hand, in our platform users can visualize the progression and current status of meteorological events, which improves awareness. On the other hand, researchers can use the aggregated data to better monitor the environment or conduct multidisciplinary analyses to explore the interdependencies among different environmental parameters. By bridging the gap between real-time data collection and data visualization, DTEClimate aims to empower both the public and scientific communities to make data-driven decisions in the face of climate change and natural disasters.

Acknowledgements

This work was carried out within PNRR-DTEClimate/REACTIVE project, no. 760008/30.12.2022.