

## About

This dashboard represents one of the deliverables of the GEOTWIN project PRIN2022, carried out by two research units at the University of Trento (coordinator) and the University of Padua (Italy).

Its primary goal is to provide a visual representation of the geographical distribution across European regions (NUTS3, NUTS2, and NUTS1) of two main factors of the Twin (Green and Digital) Transition:

- i) inventive activities in the green, the digital, and the twin realm (patents published and applied);
- ii) physical facilities that store, process, and manage large volumes of digital data (data centres).
- iii) the visualisation of these two factors is accompanied by that of some structural features of the European regions where they are located (e.g., population and GDP).

## Data sources, methodology and credits

i) The data source for inventive activities is PATSTAT.

- Green patents are identified using the CPC code Y02;

- Digital patents are identified using the CPC code Y04

- Twin patents are identified following three methodologies:

- a) Co-occurrence of CPC Y02 and Y04
- b) Patent landscaping by JINDRA & LEUSIN (2022) (<https://publications.jrc.ec.europa.eu/repository/handle/JRC130480>)
- c) Patent landscaping by GHINAMI (2025), "Automated Patent Landscaping via Citation Expansion and Semantic Filtering for Twin (Green and Digital) Patents", in CEUR-WA, Vol. 4152: <https://ceur-ws.org/Vol-4152/paper85.pdf>.

Published patents and patent applications are allocated across regions using the fractional counting method.

The curation of patent data has been realized by Francesca Ghinami, post-doc of the GEOTWIN project during the period February- April 2024

ii) The data source for datacentres is Data Center Map (<https://www.datacentermap.com/about/>)

iii) The data source for structural characteristics is the EUROSTAT

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If you are interested in working with this data, do not hesitate to get in touch!