

Portugal

Directorate General for the Territory

Portugal reaches major milestone with complete national LiDAR coverage

“Remote sensing is a key method for acquiring geospatial data worldwide. Among the available technologies, LiDAR stands out as a reliable solution for generating highly accurate spatial datasets through a rapid acquisition process, providing users with up-to-date information and supporting a better understanding of the territory. In 2025, full LiDAR coverage of mainland Portugal was achieved, enabling the development of a wide range of derived products for numerous public and private sector applications, including thematic and topographic mapping, spatial planning, cadastre, forestry, water resource management, land-use analysis, and other related activities.”

Fernanda do Carmo

General Director,
Directorate General for the Territory,
Portugal

A major milestone in remote sensing data acquisition was achieved in Portugal in 2025 with the completion of full LiDAR (Light Detection and Ranging) the coverage of the mainland, carried out by the Directorate-General for Territory (DGT).

The initiative to provide comprehensive LiDAR data dates back to 2021 when a decision was made to diversify remote sensing datasets and generate derived products using different types of sensors. The administrative process, including funding arrangements and public procurement procedures, began in 2023.

Technical activities related to data acquisition, processing, management, quality control, and the development of a public data access service were conducted throughout most of 2025. These efforts involved DGT, two consortia of private companies responsible for data acquisition, and an additional company in charge of quality control.

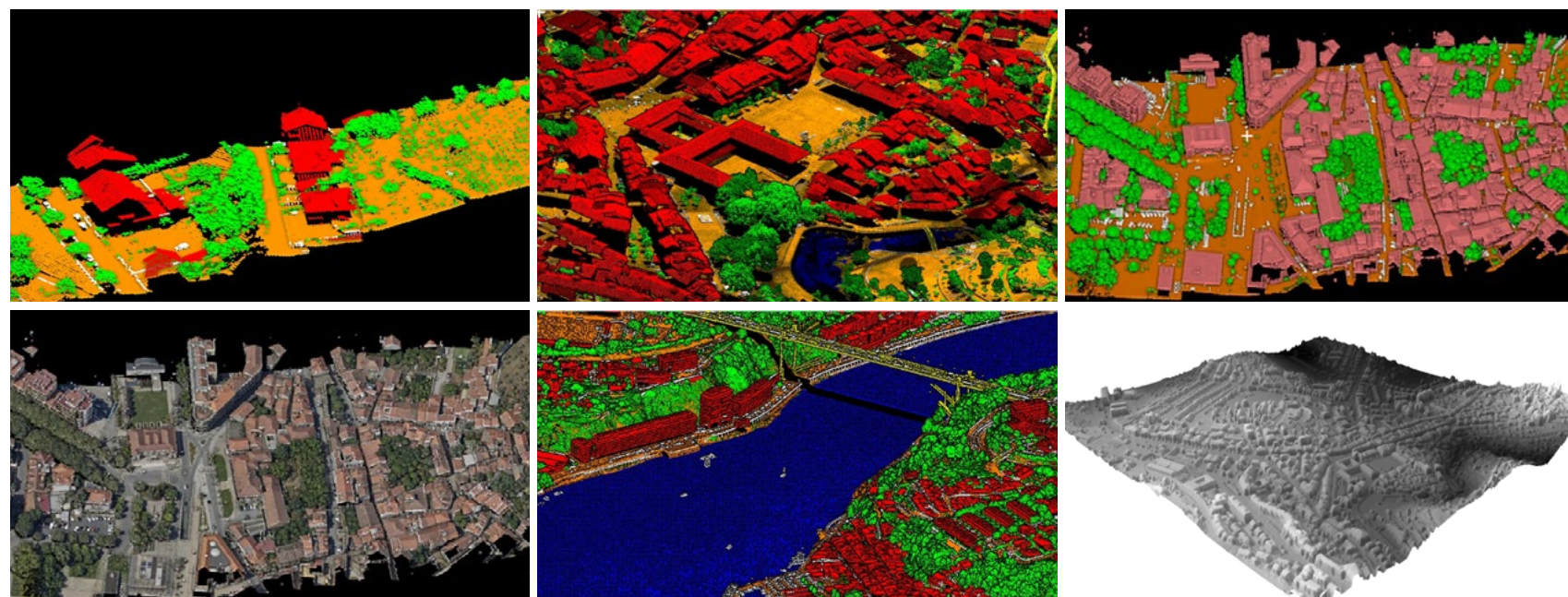
For data dissemination, DGT established a partnership with the National Centre for Advanced Computing to develop a dedicated Data Centre. Through this, users can download LAZ point cloud files, as well as Digital Terrain Models (DTM)

and Digital Surface Models (DSM) at two spatial resolutions: 50 cm and 2 m. All data are available as open data. In addition, a QGIS plugin developed by the open-source community allows users to download these datasets through a user-friendly graphical interface.

This project was funded by the Portuguese Recovery and Resilience Plan (RRP), within Component 8 - Forests.

LiDAR coverage main specifications:

- Full territorial coverage of mainland Portugal.
- Point Density: 10 points per m².
- Vertical accuracy: better than 10 cm
- Data classification - LiDAR Main classes:
 - Ground
 - Buildings
 - Vegetation (Low, Medium and High)
 - Bridges
 - Additional 25 cm resolution aerial photography (4 bands – RGB and NIR) obtained simultaneously.



Visit the DGT Data Centre:
<https://cdd.dgterritorio.gov.pt/dgt-fe?language=en>