

Spain

Directorate General for Cadastre

Historic Orthophoto Mosaic Service reveals decades of territorial change in Spain

“The Historical Cadastral Orthophoto Mosaic Viewing Service gives fast, free access to decades of territorial change. By preserving and making this archive easily available online, we’re improving efficiency while also providing citizens, technicians, and public authorities with a valuable resource for research, planning, and understanding the evolution of the landscape.”

Fernando de Aragón Amunárriz
General Director
of the Cadastre of Spain

The Spanish Directorate General for Cadastre (SDGC) has developed a Historical Cadastral Orthophoto Mosaic Viewing Service featuring digitised orthophotos from the 1980s and 1990s. The provincial mosaic, delivered in Cloud Optimised GeoTIFF (COG) format, allows users to easily view historical imagery through the Cadastre Electronic Office’s Thematic Viewer.

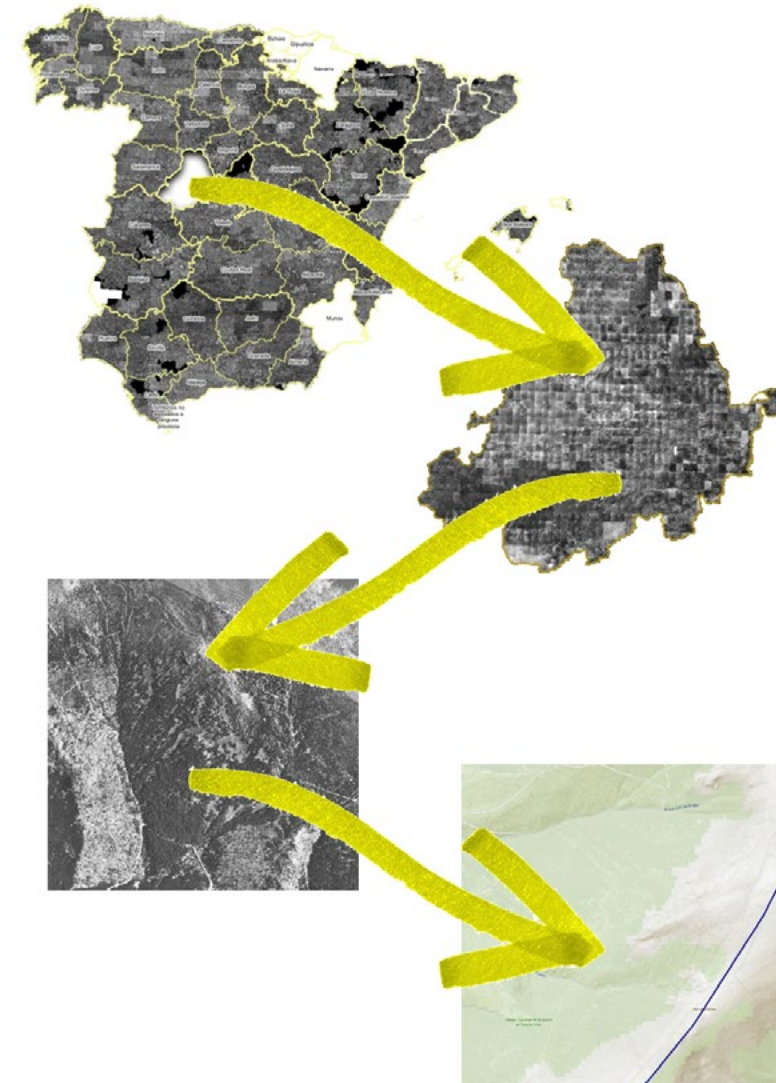
After the creation of the Spanish Cadastre in 1987, one of the key modernisation projects was to establish a precise geometric base for the rural Cadastre. A strict technical specification was developed to produce 1:5 000 scale orthophotos for most of Spain, generated from 1:15 000 photogrammetric flights and delivered with a 0.5 metre resolution in the ED50/UTM system.

Between 1987 and 1999, several cartographic companies produced around 60,000 orthophotos, delivered in paper, diapositive, and negative formats. In 2005, all orthophotos were digitised and georeferenced to preserve this historical archive and enable digital use. The images were processed using Optimal Character Recognition (OCR) to automatically extract essential flight date attribution. Cropped versions were also created to remove marginal content.

With the orthophotos cropped and georeferenced, and the month and year of the flights recorded in a file, a multi-step workflow was implemented to construct the mosaic.

1. Generation of orthophoto footprints in shapefile format which are then grouped into 1:50,000 scale National Topographic Map (MTN50) sheets.
2. The mosaic is created using the corresponding cropped and georeferenced orthophotos.

3. Quality control is carried out to detect uncovered gaps, incorrect dates, etc.
4. Imagery is converted from the ED50 reference system to the official ETRS89 reference system and MTN50 sheets are merged by province.
5. A COG file is generated for each province and integrated into a web viewing service that enables consultation in the Cadastral Thematic Viewer of the Cadastre Electronic Office.



Benefits

- Provides a unique and valuable record of land and parcel evolution.
- Contributes to the preservation of cadastral historical heritage.
- Enhances efficiency of public service offices by enabling online access and allowing other enquiries to be dealt with.
- Delivers the service completely free of charge to all users.
- Supports researchers, professionals, and public administrations to develop new projects.