

## Embracing open data to bring economic benefits and boost use in Spain

Spain's National Geographic Institute (IGN) is making a significant contribution to the open data movement.

Following Ministerial Order FOM/287/2015, which uses the Open Knowledge Foundation definition of open, IGN Spain has operated a new open data and services policy to meet user demands. As a result, data and services are available under a standard, implicit, digitally compatible license CC BY 4.0.

In 2015, the National Centre for Geographic Information (CNIG) received just eight per cent of its budget from selling data. The potential for realising a host of economic benefits, and encouraging greater use of authoritative information, means that IGN Spain considers the move to open data to be good business practice. It points to G8, G20 and UN recommendations for open data and believes it facilitates collaboration with volunteers. The introduction of open data allows its authoritative data to compete with other free or semi-free solutions, such as Open Street Map or Google, and is proving to be the best way to promote the usage of reference data.

In addition, it creates a positive synergy between Public Sector Information re-use, transparency and INSPIRE implementation.

Since the launch of open data, IGN Spain's Download Centre has seen the volume of data downloaded increase by 31.5 per cent compared to figures for 2015, with the number of files downloaded increasing by 30.5 per cent. These impressive results are the result not only of the licensing changes, but also the minimising of barriers to data use.

Another highlight of 2016 was the first completion of Lidar point cloud coverage for Spain through the National Program for Aerial Orthophotography (PNOA). Coverage was captured at 0.5 pulses/m<sup>2</sup> density over a period of six years with <15 cm RMSE(z) accomplished at a cost of €14 per km<sup>2</sup> and a Digital Terrain Model and Digital Surface Model produced from the Lidar point clouds. The second coverage began in 2017 and is aimed to be repeated every six years.

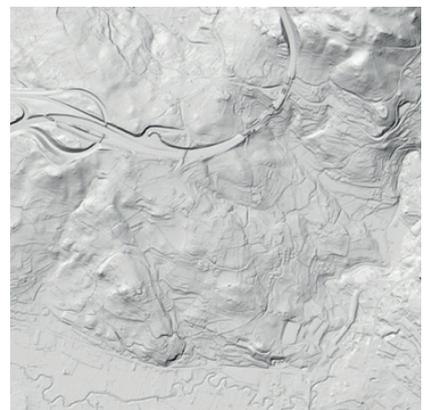
PNOA is a collaborative project coordinated by IGN Spain, and co-funded between the national administration and the autonomous regions. Downloading of all PNOA data (including Lidar LAS files) is free for both non-commercial and commercial use.



RGB coloured lidar point cloud



Digital Surface Model



Digital Terrain Model