



GREAT BRITAIN - ORDNANCE SURVEY

Fast automation for polygon datasets



“We’ve achieved 100% automation for our land parcel polygon dataset. A process that took up to eight weeks with manual intervention, now takes just 14 hours.”

David Henderson

Managing Director,
OSGB



Automating geospatial data production processes is essential for a modern National Mapping Agency. Ordnance Survey has invested in an automated workflow for fast processing of geospatial information. This investment has followed years of research into automated generalisation.

The processed information delivers both a full national dataset and a change-only update (COU) dataset for features changed since the previous version of the product.

The move away from manual production follows continuous improvement programmes and several investments to produce a robust and fully automated end-to-end COTS solution.

Country: Great Britain
Organisation: National Mapping Agency
Customer: Ordnance Survey
Challenge: To increase efficiency in producing a bespoke dataset
Solution: Automate the production of a national dataset of inferred Land Parcel Polygons



The challenge

- The amalgamation of topographic areas, address points, and complex functional site data – especially challenging in rural areas.
- The previous production process created the Land Parcel Polygon product via a series of fragile semiautomated procedures requiring many manual interventions. 150 million features needed to be processed therefore the solution had to be scalable to be able to process the full national dataset.
- The manual solution was incapable of creating COU output, because it did not have the capability to manage persistent identifiers.

The solution

Ordnance Survey successfully delivered a fully automated solution which, with a single button press:

- The automated workflow spins up virtual machines, loads source data into the cloud, deploys models, configures workflows and processes the national dataset.
- It commits all data back to target database, edge matches, and creates COU output through comparison with the previous product epoch.
- Publishes the product and COU output into target format datasets.
- Tears down virtual machines and scales down databases.

The fully automated distributed solution utilised the latest Esri and Microsoft Azure cloud-based technology. The process takes 150 million features and outputs into 40 million taking into account residential buildings, outbuildings, gardens and isolated outbuildings.

- Using latest DevOps principles, geoprocessing environments are provisioned including ArcGIS Desktop virtual machines and geodatabase services, using Azure SQL.
- Ordnance Survey collaborated closely with Esri Inc. to refine use cases for their distributed processing solution, which is now released within Production Mapping.
- Development was fast, reactive and flexible, complementing the agile nature of the project.

To find out more, please contact us using the details below.

The benefits

The award winning solution (ESRI Special Achievement in GIS Award 2018) provided Ordnance Survey with:

- Increased currency of data because of the reduced production time compared to the manual procedures before it.
- Improved production and product quality through data processing: partitioning, national datasets, edge-matching and creating change-only updates.
- Efficiency savings gained through eliminating manual input and freeing up production resources.
- Reduced hardware and support costs through distributed processing in the cloud.
- By using the COU dataset, customers benefit from smaller update files; applying updates much faster than refreshing an entire national dataset.



Ordnance Survey provides consultancy and managed technology services in a wide range of areas including data modelling, strategy and vision, geomaturity assessments, geographic information system roadmaps and providing support for major national events.

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