APGB DSM User Guide

DSM Product Specification

- Full coverage of Great Britain
- Created at 2m resolution (post spacing)
- Derived from stereo aerial photography captured to RICS Specifications (2010 5th Edition for all data captured since 2010, RICS 2001 for all other data)
- Derived from stereo aerial photography acquired between 1st April and 31st October.
- All source aerial photography has been acquired with Vexcel UltraCams state of the art digital cameras.
- Overall horizontal accuracy of the DSM will be better than +/-1.5m RMSE.
- Overall vertical accuracy of the DSM will be better than +/-1.5m RMSE.
- Datasets supplied in manageable and edge-matched 1x1km tiles
- On-line and easy-to-use web ordering mechanism (which includes order history).
- Change Only Update (COU) is provided at sq km level.

Product Description

The APGB DSM Product is a photogrammetrically derived digital surface model of Great Britain. It is an accurate representation of the earth's surface including all ground features including vegetation, buildings and other manmade structures. The DSM is often referred to as a first surface model. The DSM Product provides a good representation of the ground due to:

- Source aerial photography captured to RICS Specifications
- Accurate airborne INS and ground GPS to control the photography
- High quality digital cameras and precise triangulation of the aerial photos
- Robust, high quality auto correlation algorithms used to extract 3D features

Applications

- Flood Modelling
- Environmental impact studies
- Urban development planning
- Emergency response planning
- Infrastructure planning of roads, rail, waterways, utilities, telecommunications
- Asset management of roads, rail, waterways, utilities, telecommunications
- Land management applications for forestry and farming
- Air Quality and Noise Mapping
- 3D visualisation and 'fly-throughs'
- Visual impact studies
- Cut and Fill analysis
- Line of sight and view shed analysis, e.g. wind farm planning
- Support Government Policy development for European Directives such as:
    - Water Framework Directive
    - Environmental Noise Directive
    - Habitats Directive
    - Waste Framework, Landfill and Mining Waste Directives
    - ICZM (Integrated Coastal Zone Mapping) Directives

Coordinate System and Datums

The coordinate system used for the DSM Product is the British National Grid used by the Ordnance Survey of Great Britain which is based on the OSGB36 geodetic datum and uses the Transverse Mercator projection.

The vertical datum (mean sea level) that is used in the DSM Product is the Ordnance Survey Newlyn Datum.

More detail on the British National Grid coordinate system and notation can be found on the Ordnance Survey website at: www.ordnancesurvey.co.uk.

Data Formats

The DSM Products can be supplied in a number of data formats which are listed below:

- ASCII XYZ
- ASCII Grid
- ArcGRID

Media Format

The DSM Products can be supplied in the following media formats:

- Direct Download
- USB Storage Device
- DVD

Note that delivery of data on DVD may take longer

System Requirements

The system requirements for using the DSM Product are dependent on the operating system software, GIS/CAD application software and hardware of the user. In terms of disc space usage, each 1x1km tile will have a slightly different file size depending on the nature of the topography (compressed formats only) in each tile and the actual data format the user requested. However, a guide to the file size of the tiles is as follows:

	Format	ASCII Grid	ASCII XYZ	MB/GB
	1x1km2 Tile	2	6	MB
England	133599	267	801	GB
Scotland	85504	171	513	GB
Wales	21834	43	131	GB
GB	240212	480	1441	GB

It is strongly recommended that a backup of the data is undertaken before a user commences using any of the DSM Products.