NoiseMap
Environmental Noise Mapping Software

NoiseMap 5.2
Technical Specification

Calculation Methodology
Strict Compliance with CRTN, CRN, BS5228 (ISO 9613 soft ground, atmospheric & barrier attentuation). L_{den} by TRL (Defra) and RoI methods. Line by Line calculation output allows check against manual calculations, or to check for modelling errors.

Model Size
Models and contours an area 1000km square (1 million square km) divided into tiles of 500m. Area can be increased by using larger tile sizes. No built-in limits on number of objects or scenarios.

Map Presentation
Maps can be drawn directly from NoiseMap five at exact scale on any windows-installed printer or plotter. The map is only limited by the size of the printer or plotter.
Maps are presentation ready, with a title block, colour key, scale and other details.
Screen output can be copied to the windows clipboard and pasted into other applications for inclusion in reports.
Maps can be exported as GIS shapefiles or saved in a variety of formats, including DXF, TIF, JPEG and BMP for exporting to other graphics packages.

Model Creation
Models can be created by automatic conversion of digital maps in GIS shapefile or DXF format (eg Autocad). Models can also be created from bitmaps and from paper maps by digitising tablet, scanning or on screen digitising.

Data checking
View-as-colour (thematic viewing) gives rapid checking of most parameters, including heights, via a coloured 'temperature chart'. Cross sections give rapid visualisation and on-screen labelling can give any characteristic of an object. Automated checking detects duplicated objects and receivers within building outlines. Calculation log files record user and automatic actions.

3D viewing
Generates a solid view of noise model with all topographical information, noise contours and noise levels at specific receivers.

Data Storage
The noise model is held in a flat-file or client server‡ database. The database can be held on the user's PC or on a remote server accessible over local area network, wide area network or internet.

Data Security
Remote database can be secured by encryption to deter attacks. Database transactions are secure against communication failure by change logs‡.

Multiple concurrent users‡
Conflict resolution deals with issues arising when two users try to modify the same object at the same time.

Multiple Scenarios
The Base scenario can be modified and saved as a new scenario. The two scenarios can be compared to answer what-if questions. Further scenarios can be created from either the base scenario or the modified scenario. Proper rules of inheritance are adopted.

User Interface
On screen CAD-type interface for graphical editing.
The user interface provides a ready means of accessing the database. Any area of the model can be given a name. Each area can contain a number of scenarios, each named eg. 'wales-baseline' and 'wales-2004'.
Areas within a scenario can be selected from an outline plan by using the mouse.

Noise Calculations
Noise calculations are made tile-by-tile. A surround of chosen depth is included to avoid edge effects, allowing noise levels in adjacent tiles to match accurately. The user may choose the area to be calculated and the system can be left unattended to calculate the chosen area tile-by-tile. The Server System‡ allows any number of computers to undertake calculations at the same time, thereby allowing greatly increased speed. Calculation-only‡ licences are available for this purpose.
Contour and specific receiver noise levels are stored in the database. The system automatically manages the noise level library for easy access to results from different scenarios, calculation methods, heights and categories.
Calculations can be made at specific receiver points or a specific area can be contoured.

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Height Data
Heights can be taken from 3-d digital maps (where available), OS landform maps in both contour line and grid format (eg from Autocad and Moss); from chains of spot heights, from a NoiseMap ground model, or inserted manually.

Data Transfer
The grid of noise levels used for contouring can be exported in x,y,l format for import to other contouring software, eg. GIS.

Contours can be output in DXF and shapefile format for inclusion in Autocad, GIS and other compatible graphics packages.

Any area/scenario of the model can be saved in archive format for transfer to another model. Keyword mnemonic format can be used with some limitations on recent features.. This gives backward and forward compatibility with earlier versions of NoiseMap.

Data/ Model Security
Timed automatic backup. Database change log allows database recovery in event of transmission failure. Complete file archiving

Noise Contour Options
Line or colour filled contours
ISO 1996 colours (fixed values)
Temperature Chart (user defined values)
Digital or bitmap background
Advanced processing of contours (sum, difference, comparison with criteria, etc)

Results Processing
Advanced results processor allows contours and receiver results from any number of scenarios to be downloaded and the sum, difference, exceedance of criteria, etc, to be calculated and shown on-screen or exported. Can save the need for external spreadsheets.

Scripting
Scripting interface allows automation of many functions/operations.

Notice: This is not a complete specification and features described may not be available on all installations. NoiseMap Ltd reserves the right to alter products and specifications without notice. The operation of features is more fully described in the *NoiseMap User Reference Manual.*

User Support
Built-in context sensitive help
User Manuals
Example Model Files
Web Based Training Material
Telephone and email User Support
On-site training Courses

Objects in model
The model contains the following objects:
Ground contour lines (3-d polylines); Noise barrier lines (3-d polylines); Building Outlines (3-d polygons or polylines (need not be closed); Area outlines; Annotation; Receiver points; Road segments; Traffic flows; Route segments; Point sources; Plant lists; Construction activities; Track segments; Train vehicles; Train services; Noise categories and combinations.

Database and User Management Utilities‡
Utilities to set up and administer users and databases from a simple interface. Administration of calculation queue.

System Requirements

Client Machines
Operating system: Windows 7/8/10.
1.2 GHz PC 2 GB RAM minimum
3 GHz PC 8 GB RAM multicore* recommended for mapping large areas (* licensed option)
80GByte hard disk
Open GL support required for 3D viewing
Fast Graphics card recommended for viewing large areas

Server Machines‡
Operating system: Windows NT4/2000/XP/7/8/10
2 GHz processor, 512 MB RAM, 80GB hard disk
Backup system
Server-side software includes MySQL database server application, supplied with public licence and self- installation utility to configure the system. Manual configuration not usually needed, depending on the system where it is installed.

Note: Client and server can be in the same machine, but for multiple user access, both machines need to have network or internet ports.

‡ Remote Server System only

Specification subject to revision without notice