

- EO 
- AEO 
- RF 
- GNSS 
- RAY 

SE-AGETIM



3D TERRAIN GENERATION TOOL

FAST 

SE-AGETIM is an integrated software tools suite that enables 3D environment generation. Those environments can be used for simulation at a user specified resolution level. SE-AGETIM is dedicated to GIS experts especially. SE-AGETIM enables full integration of heterogeneous geographical data sources. Some physical database extensions mechanisms are also provided for a highly automated multisensor generation process.

Features

- Automatic 3D terrain generation software for multi sensors simulation use (EO, RF and AC domains)
- Geoconcept™ GIS included
- Capability to load major geographical digital data format of the civilian and defence market
- Easy re-generation of 3D terrain
- Support & compatibility to all SE-Workbench scene generation products
- Dedicated both to Real-time and non real-time 3D terrain exploitation
- OpenFlight Export
- 3D objects library and 3D templates library included

Source Data Manipulation

The first stage consists in heterogeneous source data manipulation that can be separated into :

- terrain grids
- terrain lines

Features data (vector information)

- 2D/3D cartographic data
- 3D models

Photos (raster information)

- satellite or aerial images

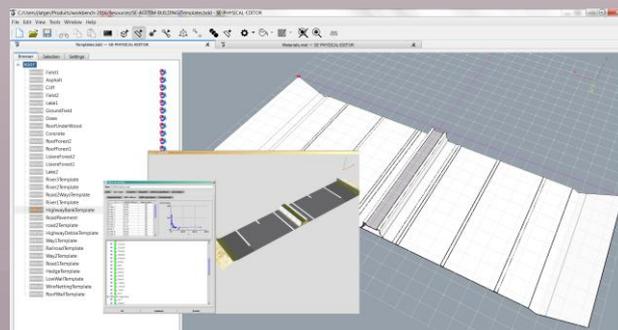


Dedicated algorithms are used in order to take care of the data fusion processes and the terrain generation. SE-AGETIM includes GEOCONCEPT™ GIS user interface that enables to do manual corrections. For example, a bad correlation between feature location and the matching elevation can be corrected at the source data level. It is also possible to draw vector data directly on a raster photo information, to enhance the feature data quality and consistency.

Templates And Objects Library Preparation

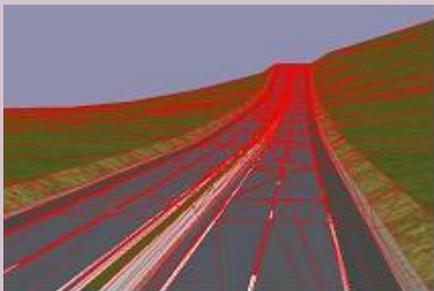
It includes the preparation of the physical attributes, both for EO, RF and AC domains:

- the first mechanism enables objects instantiation from a shared object library. The general idea is to replace an ID code (in the feature dataset) at source level, by a full 3D object at meshed level.
- the second mechanism is a powerful templates profiling. The general idea is to replace a source level data by a local meshing fitted to the source data.



Benefits

- **Ease of use:** Integrated with Geoconcept™ GIS and its powerful and friendly GUI. Capacities to load the main digital geographical data formats of the civilian and defence market
- **Scalability:** Adapted both to study and training simulation and for various sensors (IR & EM)
- **Interoperability:** compliant with SEDRIS standard
- **Modularity:** compliant with potential additional modules
- **High Efficiency:** Allows one to maintain large databases with reasonable effort



System requirements



The Multi Sensors Enhancement

SE-AGETIM product allows a database characterization in parallel to the terrain modelling. The template geometrical effects are associated to physical materials:

- in the RF domain, for instance, a physical characterization of the wall of the buildings can be necessary, which leads to a global definition of the “wall” material in term of dielectric Fresnel coefficients, based on a decomposition into multi layered inner materials. The template profiling algorithm automatically conveys this definition.
- during the terrain modelling, roads are created and automatically textured using road templates and the associated road textures. At the same time, the physical properties coming from the road template is automatically attached to them. At the end of the terrain generation process the virtual 3D scene is ready for a spectral usage.

Complex Templates

SE-AGETIM enables to model planimetric features with templates. Their geometrical complexity is independent from the terrain and increases features realism like roads or buildings, while avoiding all the terrain integration constraints.

Coverage Shaders Application

The multi representation possibilities apply to forests, trees, profiled roads, buildings...



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