



TerrainView – The Swiss Army knife for out-of-the-box Earth visualization

Create and visualize your 3D landscape in less time and in high quality with TerrainView.

With the easy-to-use features of TerrainView and additional capabilities designed specifically for professional GIS and 3D simulation users.

TerrainView lets you display and analyze the whole Earth in 3D (Fig. 1) from space down to ground level in real-time.

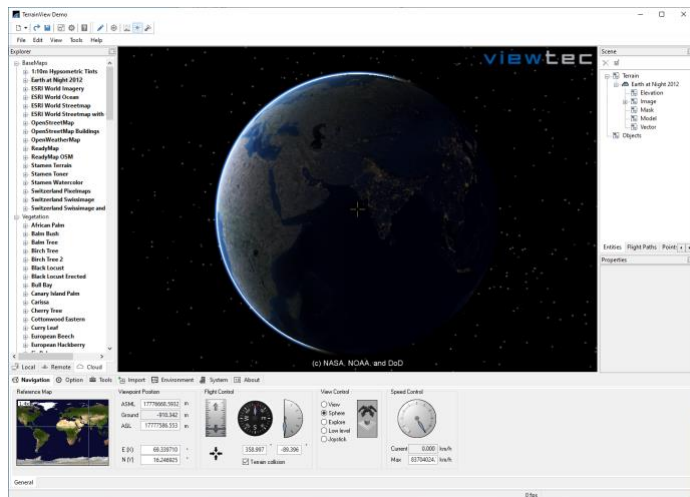


Fig. 1: Earth at Night © NASA, NOAA, DoD

With TerrainView Data, TerrainView users can access ready-to-use, high quality geodata and 3D models (Fig. 2).

TerrainView also heavily supports the use of local data in a large range of formats, allowing the integration of existing geodata and 3D models.

The TerrainView Graphical User Interface provides a real-time rendered 3D view of the scene, an easy-to-use information tree which lists all elements of the scene (layers, primitives, locations, 3D models and dynamic objects), an explorer view to access local or online data and various tools for interacting with the scene.

Navigation in the virtual scene can be done using various intuitive UI controls and using mouse and keyboard directly in the 3D view.

What can you do with TerrainView?

- Transform 2D GIS Data into a stunning 3D world with integrated terrain builder
- Access 3D model library and basemap data to enrich the scenery
- Use Remote Control API to remotely manipulate 3D objects and the camera
- Use multi-channel support to visualize the earth on multiple screens or wall environments
- Use precise 3D measurement tools to measure models, areas and distances
- Use flight paths to animate your showcase
- Show advanced weather and atmospheric effects
- Operate in connected and disconnected environments

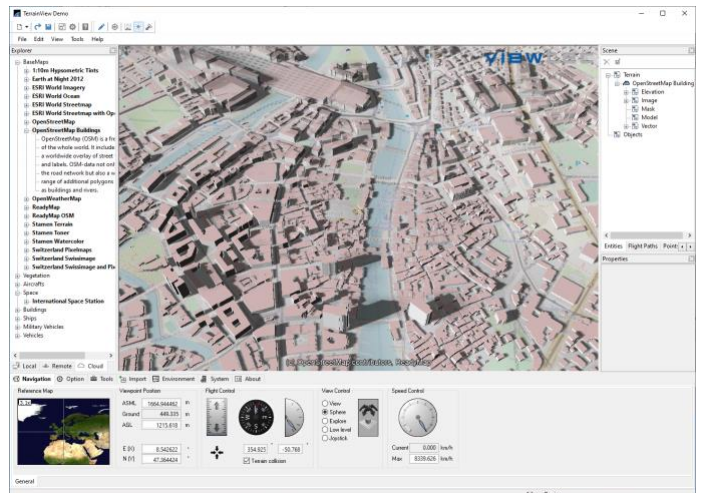


Fig. 2: OpenStreetmap with Buildings © Openstreetmap, Readymap



Terrain Builder

TerrainView provides an integrated terrain import module which provides functionality to import and merge aerial images, satellite images and digital elevation models of different sizes and resolutions. The resulting 3D terrain database is stored in a standard OGC TMS format which can immediately be viewed in TerrainView.

Import imagery and elevation data in a wide range of formats without any limits. Multi-resolution support for three basic data types: imagery, terrain and vector. Support of all common projections, raster and vector formats. Reproject data among different coordinate reference systems. Supports any number of overlapping, high-resolution image or terrain data inserts.

TerrainView uses the world geodetic projection system 1984 (WGS84) for reference and supports more than 2'500 local projection systems worldwide.

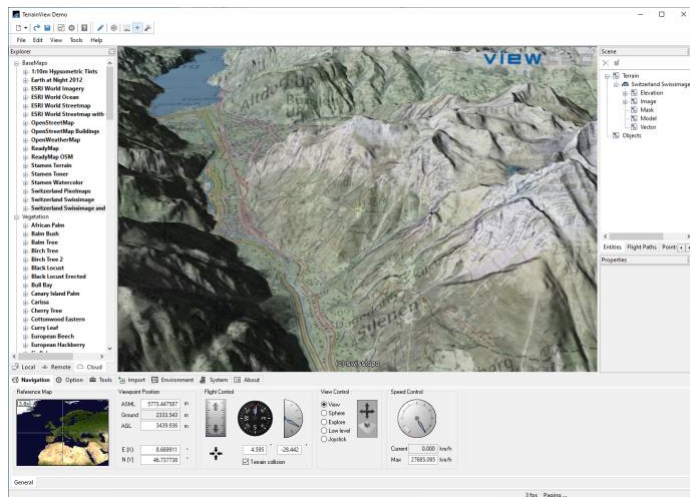


Fig. 3: Geodata blending: SWISSIMAGE 50 cm Elevation Model DHM25 25 m, PK25 Topographic Map 1:25'000 © swisstopo

Geodata Formats

TerrainView supports among others the following GIS formats:

Digital Elevation Model (DEM)

- Arc/Info ASCII Grid
- Arc/Info Binary Grid (.adf)
- USGS SDTS DEM (*CATD.DDF)
- TIFF / GeoTIFF (.tif)
- Military Elevation Data (.dt0, .dt1)
- USGS ASCII DEM (.dem)
- Atlantis MFF
- VTP Binary Terrain Format (.bt)

Raster Image Formats

- TIFF / GeoTIFF (.tif)
- Erdas Imagine (.img)
- JPEG2000 (.jp2, .j2k)
- JPEG JFIF (.jpg)
- Multi-resolution Seamless Image Database (MrSID)

Vector and Annotation Formats

- Arc/Info Binary Coverage
- OGC Geopackage (.gpkg)
- ESRI Shapefile (.shp)
- Mapinfo File
- Microstation DGN
- OGDV Vectors
- SDTS
- UK .NTF
- U.S. Census TIGER/Line

TerrainView Data

ViewTec offers ready-to-use, high quality basemap data and 3D models which TerrainView can access directly over the internet, streamed from different geodata providers.

The 3D models in the model collections "Vegetation", "Aircrafts", "Buildings", "Ships" and "Vehicles" are in ViewTec's proprietary format. You can use these models to enrich your scenes. 3D objects can be placed either on the ground, in the air or in space. Textured 3D buildings and entire city models can be easily integrated into the scenery while conserving proportions and scale at all times.



Measurements

TerrainView allows various kinds of 3D measurements: distances, angles, profiles and areas. Any number of measurements can be created, edited and stored with the scene.

3D Model and Camera Manipulation

3D models such as an international space station can be imported to enhance the realism of the terrain (Fig. 5).

TerrainView offers user-friendly functionality to manipulate objects. Various types of 3D objects with different formats can be integrated. Objects can be interactively selected, edited, rotated, moved, scaled and positioned in the 3D scenery.

Points of Interest (POIs) can be used to attach multimedia data and hyperlinks to object related websites and content within the scene at a specific location.

Flight paths are easily defined with smooth interpolation for position and orientation. To each path, 3D models of airplanes, helicopters and ground vehicles can be assigned to demonstrate real-time movement. The same functionality is used to animate the camera. Flight path technology allows the user to generate videos at a specific frame rate and resolution using different video codecs. Any flight path in a project can be exported as an AVI movie.

Weather Simulation

TerrainView provides a broad range of functionality to simulate realistic weather and flight conditions (Fig. 6). In order to generate a realistic scenery, features include varying lighting and weather conditions:

- Variable daytime and day of the year
- Volumetric 3D models of clouds
- Rain, snow and fog effects
- Ephemeris model for accurate sun & moon
- Accurate stars and planets at night
- High-altitude atmospheric effects from space
- Dynamic Shadows

3D Formats and Standards

TerrainView supports (among many others) the following 3D formats:

- Collada (dae)
- Autodesk DXF (dxf)
- Autodesk FBX (fbx)
- Autodesk 3D Studio Max (3ds)
- Lightwave (obj)
- Alias/Wavefront (obj)
- Multigen OpenFlight (flt)
- Terrex TerraPage (txp)
- ViewTec (ivc)
- Openscenegraph (ive)
- NewTek LightWave 3D (lwo)

TerrainView Multi-Channel Support

TerrainView provides a high-end system for seamless multi-channel and multi-projection visualizations on multiple screens and walls, including CAVE environments (Cave Automatic Virtual Environment) for real-time application, simulation and training. TerrainView allows the visualization on multiple screens by synchronizing the camera on all participating computers. A computer running TerrainView is required for each screen. (Fig. 4).

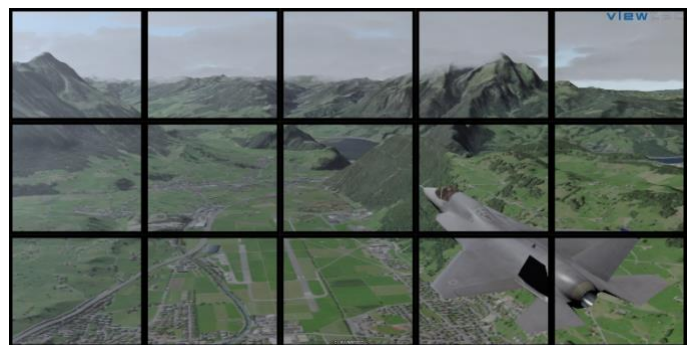


Fig. 4: TerrainView Multi-Channel capability with multiple screens

TerrainView Remote Control API

TerrainView-Remote Control API offers a way to remotely manipulate points of interest (POIs), 3D objects and the camera inside a scene over a TCP/IP connection. POIs can represent text, billboard images or hyperlinks.

Industries

Our customers successfully build solutions and showcases based on the TerrainView product for different business sectors. This includes Defense Industry, Homeland Security, Oil & Gas Industry, Flight Simulation & Training, Television Broadcasting & Multimedia, Civil Engineering, Urban Planning, Architecture & Real Estate, Imagery & Geodata Industry.

System Requirements

Hardware

- Intel® Core™ i5, i7 or i9
- 4 Gbyte RAM or more
- 1 Gbyte or more of free disk space

Graphics Card

- OpenGL 3.x support and 1 Gbyte texture RAM
- NVIDIA or AMD

Network Adapter

Supported Operating Systems

- Windows 10/11 32/64 bit

About ViewTec

ViewTec LLC is a leading software development company for interactive 3D GIS solutions. The roots of ViewTec date back to 1998. Originally founded as spin-off company emerging from the University of Zurich, Department of Computer Science, MultiMedia Laboratory, Switzerland. In operation in Switzerland until 2007. Since 2018, ViewTec LLC, Delaware, USA. The basis for our innovative products is strong commitment to quality and profound skills in software development. We actively leverage the latest technological advancements in 3D visualization.

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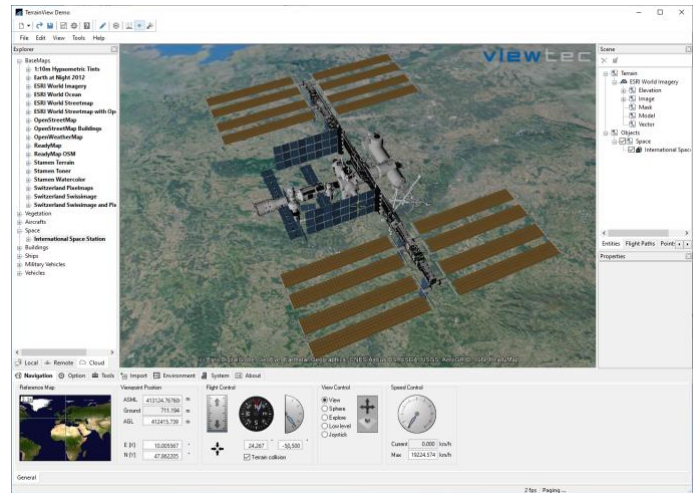


Fig. 5: Earth with TerrainView Data Model of International Space Station

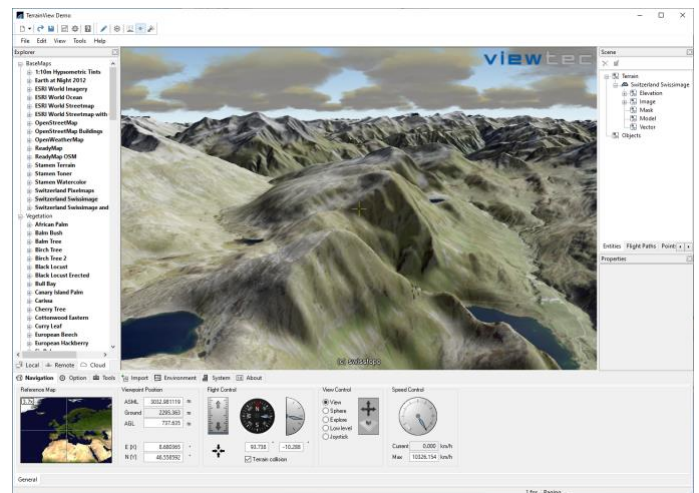


Fig. 6: SWISSIMAGE 50 cm & DMH25 with simulated atmospheric and weather conditions © swisstopo