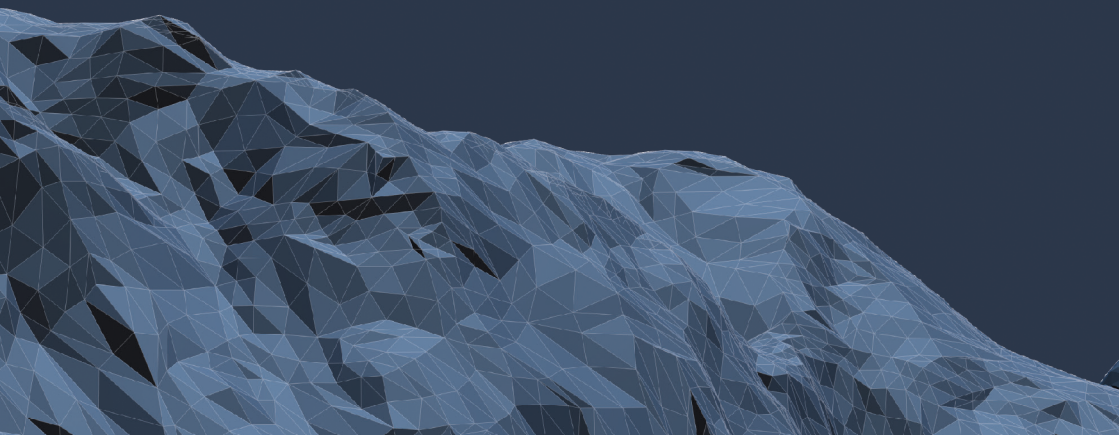


TRIAN**3DBUILDER**

Database Generation System



Trian3DBuilder
Product Information
Version 8.0

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System Requirements

- Standard PC with Microsoft Windows 11
- Works on 64-bit systems
- 1.5 GB free space on the hard disk
- Keyboard
- 3-key mouse with wheel
- Minimal requirements:
 - x86 CPU with 8GB RAM
 - 3D graphics card e.g. NVIDIA Geforce
- Recommended:
 - Intel Core I-Processor with 8 Cores or equivalent AMD Athlon
 - 16 GB RAM
 - 3D graphics card NVIDIA Geforce (e.g. RTX 3060 etc.) with 12GB RAM

Terrain Types

General

- Supports terrains of arbitrary size optimized for real-time rendering.
- Supports a multitude of industry-standard formats.
- Native OpenSceneGraph support.
- About 40 target projections (Geographic, UTM, Geocentric, ..).
 - Additional projections from the .prj file can be loaded.

Generation of various types of terrain

- Geospecific terrains:
 - Create terrains based on satellite data and aerial images.
- Geotypical terrains (Geotypic Module):
 - Replacement of terrain classes with typical photo-realistic textures.
 - Structure preserving blending between terrain classes.
 - Heterogeneous tiling in every terrain class.
 - Object placement matching underlying texture.
 - Climate zones - define several regions with various land class definitions.
 - Set up a fully featured, densely populated terrain in minutes.
- Generic terrains (Geotypic Module)
 - Create Geotypic textures with height and slope dependent texturing.
- All terrain types can be combined.

Handling and Editing

Ease of use

- Standardized, configurable user interface.
- Fast access to libraries.
- Immediate visualization of all data with WYSIWYG editing.
- Simultaneous views for 2D and 3D.
- Support for multiple monitors.
- Integration of external texture and geometry editors.
- Optional auto-save function.
- Project Wizard to quickly produce terrains:
 - Importing street data (OpenDRIVE, HERE HD), nautical data (7Cs), data from OpenStreetMap,...

WYSIWYG-Editing

- Generate and edit points, lines ,and areas in 3D and 2D.
- Immediate feedback showing models, line and area objects.
- Work synchronously in 2D and 3D.
- Edit vector attributes with immediate visual feedback.

Road WYSIWYG-Editing

- Adjust lane count and lane width along the route with direct visual feedback.
- Edit crossing outline and offset.
- Edit width polynomials (separators) for lane width and height polynomials
- Perfectly match underlying satellite imagery.
- Edit AI splines.

Comprehensive Vector Editing

- Import, create ,and edit vector data with supported types:
 - Points
 - Lines
 - Bezier lines
 - Clothoid/ Arc lines
 - Areas
 - Bezier areas
- Vector groups to organize and split files for multiple user support.
- Reorder vectors via drag-and-drop.
- Extensive transformation tools.

- Visibility and activation states for all data.
- Various tools for optimization of vector data:
 - Verify vectors - find and fix corrupted vectors
 - Find angles - find vectors with certain (e.g. acute) angles
 - Intersections - find and fix vector intersections (buildings on roads, etc.)
 - Merge points dependent on distance or angle.
 - Refine vector with a vertice at certain distances.
 - Connect lines - combine lines with the same endpoints and attributes.
 - Create an outline - create areas from lines with certain width.
 - Populate the area with random footprints (e.g. for building extrusion).
 - Make area rectangular
 - Select vector features by size
 - Orientate points to a line (e.g. rotate signs in relation to road)
 - Add offset - convert vector by adding offset (pos/rot/scale)
 - Fill building footprint - best matching to place geometry in footprint
 - Bevel lines/areas - round out vectors by adding vertices
 - Smooth tangent height
- Convert point lists to line.
- Insert points on lines/area outlines.
- Split lines/areas.
- Conversion between lines/areas and Bezier lines/areas.
- Conversion between lines and areas.
- Revert point order of lines/areas.
- Extend and connect lines.
- Automatically place bridges on intersecting lines.
- Assign generation attributes using libraries.
- Automatic FACC assignment to vectors.
- ESRI-Shape export of vector data.
- Assign imported vector attributes e.g. taken from shapefile attributes.
- Hide/unhide selected vectors.
- Assign local attributes to vectors.

Misc GUI Features

- Height editing:
 - Create and edit elevation data in 2D and 3D.
 - Brush for 2D or 3D with adjustable size and misc. functionalities e.g. height up/down, smooth, specific height, load shape bitmap.
- Undo / Redo:
 - Undo and redo all user changes.
 - Adjust several undo steps.
- Auto save option
- Height edit window
- Polynomial edit window

Data Management

- Management of re-usable data in libraries.
 - Texture, geometry and vector attributes.
- Definition of data sets e.g. for various seasons or regions.
- Definition of groups with several elements.
- Definition of land cover features.
 - Texture, alpha mask and object placement.
- Generation attributes for vector data.
 - Stack of combined modifiers.
 - Add /edit attributes for textures and object entries.

Levels of Detail (LOD)

- LODs for each tile:
 - Definition of high detail insets possible.
 - Various attributes can be assigned for each terrain tile.
 - * LOD count with switch-distances, mesh resolution, texture resolution.
 - * Geotypic object placement.
 - Fast switching and assignment of local settings to tiles.
- LODs for Objects:
 - Size-dependent LOD switching of object groups.
- Multiple grids:
 - Define multiple grids and export each as a database.
 - Overlapping grids can be integrated.

Vector generation templates

- Create /assign / edit vector generation templates and user vectors.
- Simple generation functions are represented as a Modifier.
- Combine different Modifiers to create complex generation rules.
- Define multiple rules for a vector via the Modifier stack to achieve complex settings.

Modifiers for vector generation templates

• Basic Modifiers

- Modifier 'AreaObjectPlacer' allows you to manipulate and transform an area to your liking
- Modifier 'Outline' generates contours from vector data, e.g. for build geometry or RenderInTexture.
- Modifier 'Billboard' generates Billboard and allows customization.
- Modifier 'Border' generates border contours, e.g. for RenderInTexture and mesh manipulation.
- Modifier 'Comment' Leave a comment.
- Modifier 'Contour Object placer' Generate models of your choosing, along a contour
- Modifier 'DummySetupProject' Create an empty.
- Modifier 'Extrude' for the generation of fences and hedges for example.
- Modifier 'Object Extrude' to process model templates and extrude them along a path.
- Modifier 'Formatstack' Allows you to assign geometries to individual formats.
- Modifier 'Geometry' to build plane objects from outlines.
- Modifier 'Height Type' defines the height calculation.
- Modifier 'Insert' for cutting objects and regions into the ground mesh.
 - * Supports also inserts with inner islands.
 - * Insert objects can be rendered to texture in low-res LODs.
- Modifier 'Layer' for setting planar objects upon terrain.
- Modifier 'Level Of Detail' to automatically activate or deactivate Modifier stacks with respect to the viewing distance.
- Modifier 'lightpoint' Create a lightpoint.
- Modifier 'LOD select' Assign geometries to individual LOD layers.
- Modifier 'Mapping' to define the direction and tiling of the texture.
- Modifier 'Multi Texture' supports the stacking of textures.
- Modifier 'Node Name' Assign a name to geometry, you may find all geometries with the same Node Name, in the same directory, when searched for.
- Modifier 'Object Layer Name' Assign a name to the layer of the object.
- Modifier 'Object Eraser' Any neighboring object touching this one, may not be shown in the generation.
- Modifier 'Outline' creates an outline out of a texture of your choosing.
- Modifier 'Point Link' to logically link features, e.g. crossing points or signals to roads.
- Modifier 'RenderInTexture' for painting vector data into the terrain's texture. Seamless transitions by blending border regions.
- Modifier 'Shading' Customize shading.
- Modifier 'Surface attribute' Add attributes to the surface.

• Building Modifiers

- Modifier 'Object Extrude' to process model templates and extrude them along a path.
- Modifier 'Sign' for taxiway and text signs.
- Modifier 'Building' to generate extruded 3D buildings from outlines with:
 - * Various levels,
 - * Miscellaneous roof types (flat, hip, gable, shed, dome, onion).
- Modifier 'Building Interiors':
 - * Generate generic building interiors due to various generation templates (apartment, office...).
 - * Generation of various LODs.
 - * Façade elements (windows, stucco elements, oriels, etc.).
- Modifier 'Shading' to define normal shade mode (flat, smooth).

• Object Placement Modifiers

- Modifier 'Point Object Placer' to assign geometry to point vectors.
- Modifier 'Point Offset' to place models with an offset relatively close to the point position.
 - * Variable geometry assignment, size and rotation.
 - * Variable geometry assignment, size and rotation.
- Modifier 'Geotypic Object Placer' can use geotypic object placement definitions.
- Modifier 'Object Eraser' to suppress objects with lower priority.
- Modifier 'Collision' for flexible collision calculations between objects.
- Modifier 'Object Connector' e.g. for power lines.
- Modifier 'Vector Template' to place vector data (including generation rules), such as lettering or arrows, on roads.
- Modifier 'Billboard' places a billboard geometry on a vector with an object placer Modifier.

• Attribute Modifiers

- Modifier 'Vector Attribute' to add/edit vector attributes.
- Modifier 'SurfaceAttribute' to define surface attributes.
- Modifier 'Node Name' to set a name to special nodes or switches.
- Modifier 'Object Layer Name' to define object layers, e.g. MetaFlight Export.
- Modifier 'Sensor Attributes' to assign specific materials to objects for sensor calculation.
- Modifier 'Delaunay' to define how vectors are handled for Delaunay triangulation.
- Modifier 'Fringe Geometry' to add a fringe for transitions e.g. from land to water.

• Format specific Modifiers

- Modifier 'VBS2 Surface' to define special VBS surface attributes used for scattering.

- Modifier 'VBS2 Object' to define objects with various attributes, like weight and hit points.

- **Road Modifiers**

- Modifier 'ProfilerHD' to define profiles for complex roads.
- Modifier 'ProfilerLaneHD' to define lanes for profiler roads.
- Modifier 'Profiler' to define profiles for complex roads.
- Modifier 'Crossing' to build crossings and transitions for several road constellations.
- Modifier 'Tunnel' to define tunnel shapes.
- Modifier 'Bridge' to define bridge shape and poles.
- Modifier 'Signal' to export signal settings to OpenDRIVE.
- Modifier 'OpenDRIVE Object' to add objects to the OpenDRIVE Export.
- Modifier 'RoadSign' to place signs of informative nature.
- Modifier 'Marking' to supplement the automatically generated road marks.

Modules

Geotypic

- Various terrain types:
 - Generic, geotypical
 - See section [Terrain types](#) for further information.

Roads

- **Roads**

- Generation of roads and rivers from profiles.
- Various lanes.
- Road markings.
- Sign and signals.
- Bridges, tunnels, over/underpasses

- **Crossings**

- Fully automated generation of crossings.
- Arbitrary number of roads and alignments.
- Roundabouts.
- Transition between various lanes.

- **Generation of tunnels and bridges**

- Crossings and transitions supported.

Roads Plus

- All features of the Roads Module.
- Roads according to road construction rules.
 - From arcs/clothoids.
 - Smooth height progression through polynomials.
 - Cross-fall in curves.
- Import
 - Direct OpenStreetMap and OpenDRIVE Data Import.
 - Convert Shape data to profiled roads.
 - HERE HD Live Maps via Project Wizard.
 - HERE RDF databases via Project Wizard.
 - Automatic assignment of road templates to real-world data.
 - * Use xml settings to control template generation due to country rules etc.
- OpenDRIVE export

Airport

- Import
 - Free database of over 35,000 airports worldwide.
 - Runways with different types of markings and lighting.
 - Taxiways with markings/lights and signs.
 - Apron
- Editing
 - Possibility to edit and create runways.
 - Conversion into editable vector data.
 - Generation attributes configurable using a .xml file.
- Generation
 - Approach lighting:
 - * ALSF_I, ALSF_II, CALVERT, CALVERT_ILS,
 - * SSALR, SSALF, SALS, - MALSR, MALSF, MALS,
 - * ODALS, RAIL
 - Edge lights - LIRL, MIRL, HIRL
 - Runway light indicator - PAPI, VASI
 - Runway marking code - Visual, non-precision and precision approach markings.
 - Taxiway signs
 - Placement of airport objects, e.g. tower, windsock.

Maritime

- Import ENC Data: S57, S63, 7CB, 7CC, 7CX,...
- Seabed Triangulated from Depth Contours/Lines and Soundings.

- Coastline with Quay Walls, Shoreline Constructions and Piers.
- Buoys/Beacons with Topmarks:
 - Automatic placement from a comprehensive library.
 - Lights with Blink Code, Color, Direction, Range, Intensity, etc.

Sensor

- Raster map with Material classification.
- ClassIDs with arbitrary physical attributes.
- Each pixel can mix several materials.
- IR, LIDAR, Night Vision

Software Development Kit (SDK)

- API to extend Trian3DBuilder with Plug-Ins.
 - Import/Export Plug-in: for image formats, geometry formats, geographical raster formats and vector formats.
 - Generation Plug-ins: to broaden the generation capacity, e.g. render to texture or texture filtering.
 - ExportTerrain Plug-in: addition of new export formats.
 - GUI Plug-in: extend the software with your menu items and dialogs.
 - Modifier Plug-in: extend custom Modifiers.

Lua Scripting

- API to extend Trian3DBuilder with Plug-Ins.
 - Import data from various sources and create projects
 - Adjust and create vector data
 - Create modifiers and adjust modifier values based on attributes
 - Library access and manipulation
 - Access to vector tree with Groups, List, Geode, attributes

Scope of supply

- Detailed manual.
- Comprehensive libraries with textures, objects and vector attributes.
- Detailed introduction with 'getting started' document and advanced tutorials.
- Various example projects.

Generation

Object Placement

- Various methods of geometry integration (internal reference, external reference, copy, inherit, relative).
- Rotation, scale and object closeness with variance.
- Collision testing.
- Classify your objects with name and size.

Object Generation

- Create rivers, lakes and further hydroponic systems for your terrain.
 - Rivers can flow downwards and have taper settings.
- Powerlines and Forests
 - Place different types of power poles and power lines; power pole models are delivered with Trian3DBuilder.
 - Create canopy forest geometry with texture on the roof.
 - Clutter individual tree objects with definable variance.
- Create hedges and fences.

Building Generation

- Buildings from outlines with misc. roof types.
- Roof overhangs and extruded façades.
- Simple GUI to flexibly define façades.
- Add various façade elements and oriels.
- Automatically create building interiors from various templates (apartment, office, etc.).

Geometry integration

- Cut objects, lines or areas into the terrain mesh.
- Height adaptation (specific height, dependent on relief, river behavior (continuous decline), average height, ClipOnSurface).
- Border for a smooth transition to the environment.
- Cut isle contours.

Comprehensive database optimization

- Tiling and LOD switching of database.
- Novel polygon saving edge algorithm.
- Optimized scene graph.
- Geometry simplification using TIN-algorithm.

- Export of indexed geometry or tri-strips if requested.
- Texture sharing between objects.
- Compressed texture support (dds).
- Definition of different texture and mesh resolutions for tiles.
- Size dependant LOD switching of objects.
- Paging supported.
- Enhanced paging support for individual LODs and object groups.

Verification of databases in internal 3D viewer

- High-performance visualization.
- Tree view of scenegraph.
- Adjustment of render parameters: camera clipping, fog, lighting.
- Various cameras for individual navigation.
- Save camera positions.
- Statistics of frame rate, number of triangles,...

Further Features

- Parallel export with individual format and generation settings.
- Cutting in external databases as high-resolution insets.
- Optimized performance through multi-core/multi-CPU support.
- Filters for terrain textures (snow, shadow from relief).
- Define your own file path and naming output.
- Tag objects, name objects and groups and define individual SceneGraph structures.

Terrain Exporters

OpenFlight / MetaFlight Exporter

- Export to various versions of the industry standard format OpenFlight.
- Supports all different object types.
- Supports Metaflight:
 - Hierarchy types ADDITIVE and SUBSTITUTIVE.
 - Supports Virtual texture.
 - Supports Object Layer.
 - Supports multiple sub-databases.
 - Write individual file structure.
 - Create .mft files.

FBX Exporter

- Export to Autodesk FBX format.
- Supports ASCII and binary export.
- Import script to convert in Unity® scene.
- Optimized SceneGraph.
- Support PBR Materials and external model references.

gITF and 3D Tiles Export

- gITF modern 3D format for game engines
- 3D Tiles - tiles streaming format for Cesium etc.

CDB Exporter

- Export a scene into the OGC CDB format.
- Export a defined number of layers (see supported CDB layers below).
- Support terrain elevation and textures, vectors, models and sensor textures and materials.
- Support the export of interior Models.
- Support vector network features.

Supported CDB layers:

Feature	Import	Export
001_Elevation	x	x
002_MinMaxElevation		x
003_MaxCulture		x
004_Imagery	x	x
005_RM_Texture	x	x
006_RMDescriptor	x	x
100_GSFeature	x	x
101_GTFeature	x	x
102_GeoPolitical		x
200_VectorMaterial	x	x
201_RoadNetwork	x	x
202_RailroadNetwork	x	x
203_PowerLineNetwork	x	x
204_HydrographyNetwork	x	x
300_GSModelGeometry	x	x
301_GSModelTexture	x	x
303_GSModelDescriptor	x	x
304_GSModelMaterial	x	x
309_GSModelCMT	x	x
310_T2DModelGeometry		x
500_GTModelGeometry	x	x
501_GTModelTexture	x	x
503_GTModelDescriptor	x	x
504_GTModelMaterial	x	x
505_GTModelCMT	x	x
305_GSModelInteriorGeometry		x
306_GSModelInteriorTexture		x
307_GSModelInteriorDescriptor		x
308_GSModelInteriorMaterial		x
506_GTModelInteriorGeometry		x
507_GTModelInteriorTexture		x
508_GTModelInteriorDescriptor		x
509_GTModelInteriorMaterial		x
510_GTModelInteriorCMT		x

Datasmith Exporter

- Exporter for the Unreal Engine format.
- Supports UE 4.24 to latest.
- Use dataprep recipes to customize geometry during import for your special needs.

VBS®3 Exporter

- Simply create VBS terrain with Trian3DBuilder's usual simple workflow.
- Export to VBS 1.6 - 3.9.
- Support of geospecific and generic/geotypic texturing.
- Full support of all Modifiers for texturing, object placement and generation.
- Manipulate elevation with Modifier 'Insert', 'Border' and the height brush.
- Export all supported 3d model formats to VBS .p3d format.
- Import and place Bohemia VBS .p3d models.
- Definition of all VBS surface types with one or more clutter layers.
- Generation of VBS roads and VBS river.
- Use all supported generation geographical data (sat image, shape files,..) in VBS Tools.

Steel Beasts Professional® Exporter

- Support generic/geotypic texturing and easy assignment of Steel Beast Textures types.
- Full support of all Modifiers for texturing, object placement and generation.
- Support of different road types.

OpenDRIVE Exporter (included in Roads Plus Module)

- Open file format for the logical description of road networks.
- AI vehicles drive smoothly by following clothoid/arc-constructed AI splines.
- Export road, crossing, signal and object information.

More Exporters

- Wavefront OBJ (.obj)
- Collada (.dae)
- Stereolithography (.stl)
- DirectX (.x)
- Autodesk 3ds (.3ds)

Dependent Exporters

- Add dependent exporters to a full export format to get secondary generation data:
 - OpenDRIVE
 - Text Dump Data
 - Shape Export

Supported Formats

Elevation

Import

- Arc/Info ASCII Grid(*.asc)
- Arc/Info Binary Grid(*.adf)
- Arc/Info Export Format(*.e00)
- Bathymetry Attributed Grid(*.bag)
- VTP Binary Terrain(*.bt)
- DTED Level 0(*.dt0)
- DTED Level 1(*.dt1)
- DTED Level 2(*.dt2)
- SRTM(*.hgt)
- USGS ASCII DEM(*.dem)
- ERDAS IMG DEM(*.img)
- Geotiff Elevation(*.tif)
- Geotiff Elevation(*.tiff)
- ASCII Gridded XYZ(*.xyz)
- GeoSoft Grid eXchange(*.gxf)
- HF2/HFZ heightfield raster(*.hf2)
- Japanese DEM(*.mem)
- Terragen(TM) Terrain File(*.ter)
- SDTS Raster(*.ddf)
- ESRI hdr(*.hdr)
- ENVI hdr(*.hdr)
- Erdas Imagine Raw(*.raw)
- Erdas Imagine Raw(*.bl)
- NTF Grid/Contour(*.ntf)
- Netpbm(*.pgm)
- Netpbm(*.ppm)

Export

- Arc/Info ASCII Grid(*.asc)
- VTP Binary Terrain(*.bt)
- DTED Level 0(*.dt0)
- DTED Level 1(*.dt1)
- DTED Level 2(*.dt2)
- SRTM(*.hgt)
- USGS ASCII DEM(*.dem)

-
- Geotiff Elevation(*.tif)
 - Geotiff Elevation(*.tiff)
 - ASCII Gridded XYZ(*.xyz)
 - HF2/HFZ heightfield raster(*.hf2)
 - Terragen(TM) Terrain File(*.ter)
 - ESRI hdr(*.hdr)
 - ENVI hdr(*.hdr)
 - NTF Grid/Contour(*.ntf)
 - Netpbm(*.pgm)

Landcover

- Geotiff (.tif, .tiff)
- Portable Network Graphics (.png)
- JPEG (.jpg)
- JPEG 2000 (.jp2)
- ENVI BIL, BIP, BSQ (.bil, .bip, .bsq)
- ECW (.ecw)
- Erdas Imagine Raw (.img)
- NITF (.ntf)
- ADRG Digitized Raster Graphics (.thf)
- BSB Nautical Chart (.bsb)

Satellite

- Geotiff (.tif, .tiff)
- Portable Network Graphics (.png)
- JPEG (.jpg)
- JPEG 2000 (.jp2)
- ENVI BIL, BIP, BSQ (.bil, .bip, .bsq)
- ECW (.ecw)
- Erdas Imagine Raw (.img)
- NITF (.ntf)
- ADRG Digitized Raster Graphics (.thf)
- BSB Nautical Chart (.bsb)
- Web Map Service (.xml)

Vector data

Import

- Arc/Info ASCII(*.e00)

- Arc/Info BINARY{*.e00}
- SDTS{*.catd.ddf}
- ESRI Shapefiles{*.shp}
- ESRI Shapefiles{*.dbf}
- MapInfo{*.mif}
- AutoCAD DXF{*.dxf}
- MapInfo{*.tab}
- Atlas BNA{*.bna}
- GeoJSON{*.geojson}
- Microstation DGN{*.dgn}
- S-57 cell file{*.000}
- GPS Exchange Format{*.gpx}
- GMT ASCII Vectors{*.gmt}
- GPSTrackMaker{*.gtm}
- GPSTrackMaker{*.gtz}
- X-Plane/Flightgear aeronautical data{*.dat}
- GeoConcept text{*.gxt}
- VRT - Virtual Datasource{*.vrt}
- UK National Transfer Format{*.ntf}
- U.S. Census TIGER/Line{*.rt1}
- U.S. Census TIGER/Line{*.rta}
- SevenCs SENC file {*.7cb}
- SevenCs SENC catalogue file{*.7cc}
- S-57 cell file{*.000}
- S-57 catalog file{*.031}
- SevenCs directENC package{*.7cx}
- Keyhole Markup Language{*.kml}
- Keyhole Markup Language Compressed{*.kmz}
- Mapillary JSON{*.json}
- OpenStreetMap XML{*.osm}
- OpenDrive XML{*.xodr}

Export

- ESRI Shapefiles{*.shp}
- Atlas BNA{*.bna}
- AutoCAD DXF{*.dxf}
- GeoJSON{*.geojson}
- GMT ASCII Vectors{*.gmt}
- MapInfo{*.tab}
- Microstation DGN{*.dgn}

- GPSTrackMaker{*.gtm}
- GPSTrackMaker{*.gtz}
- GPS Exchange Format{*.gpx}
- Keyhole Markup Language{*.kml}
- Keyhole Markup Language Compressed{*.kmz}
- OpenDrive XML{*.xodr}
- IPG Carmaker Road5 {*.rd5}

Textures

Import

- Windows Bitmap{*.bmp}
- DirectX{*.dds}
- GIF{*.gif}
- Portable Network Graphics{*.png}
- JPEG{*.jpg}
- SGI RGB{*.rgb}
- SGI RGBA{*.rgba}
- SGI{*.sgi}
- SGI INT{*.int}
- SGI INTA{*.inta}
- SGI BW{*.bw}
- Targa{*.tga}
- TIFF{*.tif}
- TIFF{*.tiff}

Export

- Windows Bitmap{*.bmp}
- DirectX{*.dds}
- JPEG{*.jpg}
- Portable Network Graphics{*.png}
- SGI RGB{*.rgb}
- SGI RGBA{*.rgba}
- Targa{*.tga}
- TIFF{*.tif}
- TIFF{*.tiff}

Objects

Import

- glTF ascii loader{*.gltf}
- glb binary loader{*.glb};
- Google Earth compressed Model KMZ{*.kmz}
- Google Earth Model KML{*.kml}
- SpeedTree{*.srt}
- SpeedTree{*.prefab}
- PointCloudData{*.pcd}
- AC3D{*.ac}
- OpenFlight{*.flt}
- COLLADA{*.dae}
- OSG ASCII{*.osg}
- OSG Archive{*.osga}
- OSG Binary{*.osgb}
- OSG Text{*.osgt}
- OSG XML{*.osgx}
- OSG Binary IVE{*.ive}
- Autodesk 3D Studio{*.3ds}
- Lightwave Object{*.lwo}
- Autodesk DXF{*.dxf}
- Autodesk FBX{*.fbx}
- Carbon Graphics Geo{*.geo}
- Wavefront OBJ{*.obj}
- Terrex TerraPage{*.txp}
- DirectX{*.x}
- ESRI Shape{*.shp}
- CityGml{*.xml}
- Stereolithography{*.stl}
- Stereolithography{*.sta}
- CityGML{*.gml}
- LAS point cloud{*.las}
- Bohemia P3D{*.p3d}

Export

- Autodesk FBX{*.fbx}
- glTF ascii writer{*.gltf}
- glb binary writer{*.glb}
- 3DTiles {*.json}

- SpeedTree(*.srt)
- SpeedTree(*.prefab)
- Autodesk 3D Studio(*.3ds)
- AC3D(*.ac)
- COLLADA(*.dae)
- Autodesk DXF(*.dxf)
- OSG Binary IVE(*.ive)
- OpenFlight(*.flt)
- OSG ASCII(*.osg)
- OSG Archive(*.osga)
- OSG Binary(*.osgb)
- OSG Text(*.osgt)
- OSG XML(*.osgx)
- Wavefront OBJ(*.obj)
- DirectX(*.x)
- Stereolithography(*.stl)
- Bohemia P3D(*.p3d)

Geo Imagery

Import

- GeoTIFF(*.tif)
- GeoTIFF(*.tiff)
- Portable Network Graphics(*.png)
- JPEG(*.jpg)
- JPEG 2000(*.jpg2)
- JPEG 2000(*.jp2)
- ENVI BIL(*.bil)
- ENVI BIP(*.bip)
- ENVI BSQ(*.bsq)
- ECW(*.ecw)
- MrSID(*.sid)
- Erdas Imagine Raw(*.img)
- NITF(*.ntf)
- ADRG Digitized Raster Graphics(*.thf)
- BSB Nautical Chart(*.bsb)
- Web Map Services(*.xml)

Export

- GeoTIFF(*.tif)
- GeoTIFF(*.tiff)
- Portable Network Graphics(*.png)
- JPEG 2000(*.jpg2)
- JPEG 2000(*.jp2)
- Triang3D Project(*.tbp)
- Genesis Project (*.gproj)
- CDB Common Database

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