RELEASE NOTES

TERRAEXPLORER FOR DESKTOP 7.2.1

About TerraExplorer for Desktop

TerraExplorer is a cutting-edge 3D GIS desktop viewer and creator that provides powerful tools and a high-resolution 3D environment in which to view, query, analyze and present geospatial data.
With TerraExplorer's robust and extensive capabilities, realistic 3D visualizations can be created by overlaying the terrain with unlimited data layers, 3D models, virtual objects and more.

Analysis

In addition to basic measurement and analysis tools for distance, slope, and volume measurements, TerraExplorer features advanced capabilities, including 3D plane area measurement, imagery comparison, and dynamic 3D viewshed.

Display

Imagery and elevation layers of unlimited size and resolution in a wide range of formats can be overlaid on the terrain and seamlessly integrated with feature layers and multi-resolution, stream-optimized 3D mesh model layers for easy visualization, access, and analysis of 3D geospatial data. If a new layer is based on a source that uses a different coordinate system, the layer can be reprojected to the project's coordinate system.

Point, line and polygon features can be displayed and used to display advanced layer information based on their attribute data. TerraExplorer also includes an extensive set of objects: 2D and 3D, dynamic, buildings, models, point cloud models and video, that can be displayed on the terrain, as well as advanced terrain objects that allow terrain modification within TerraExplorer Pro. A flexible clipboard mechanism and sophisticated duplication tools make it easy to copy, paste, and position objects on the terrain.

Realism is enhanced with environment settings that include lighting effects, horizon distance, fog color, sky texture, cloud display, and shadow color.

Spatial Queries

TerraExplorer provides advanced capabilities for manipulating feature and 3DML data and analyzing spatial relationships. Various spatial operations can be performed on a layer's features, including merging features into a single feature, clipping one polygon from another, exploding a multi-part feature into its individual component features, and exporting selected features to a new file.

Complex spatial and attribute queries are supported. Features can be filtered based on attribute value or based on their spatial relationship with a specified polygon, line point or object. A buffer zone can be defined to include features within a certain radius of the selection.

Publishing Data

SkylineGlobe Server streamlines the TerraExplorer workflow, enabling complete projects and layers to be optimized and published directly from TerraExplorer Pro to the cloud server. Through a single publishing operation, the data is made available to all TerraExplorer clients: Desktop, Mobile, and TE for Web, as well as standard geospatial clients such as WFS/WFS-T/WMS/WMTS/3D Tiles (Cesium).**Creating and Sharing 3D Presentations**

TerraExplorer's presentation tools enable you to create a presentation, in which you communicate a specific view of the 3D World, by combining a customized flight route with a particular display of the project. Your presentation consists of one or more steps, in each of which you control the display of the 3D World, including current camera position, layer and object visibility, system time, and popup messages and captions. Presentations can be easily converted to standard video files.

Optimization

Advanced tools allow conversion of model files and of point cloud data from various formats to a stream-optimized Skyline-proprietary format for improved display performance as well as download rate. The Extract Terrain tool extracts and creates a subset of a local or remote terrain database for easy distribution.
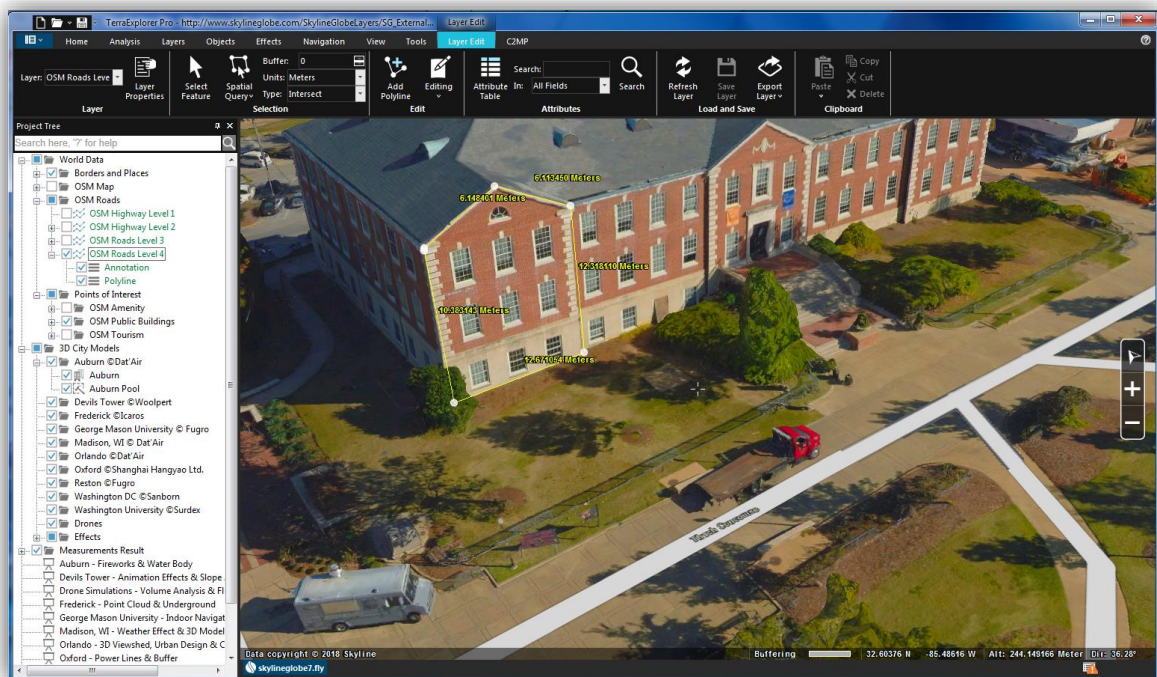
New Features in Release 7.2.1

Import and Convert Vricon 3D Tiles

Vricon 3D models can now be streamed in 3D Tiles format directly from the Vricon web server or imported and automatically converted to the stream optimized, 3DML mesh layer format. This enables them to be streamed with SkylineGlobe Server and merged with classification information so that you can access attribute data and perform feature layer operations on the mesh layer.

Enhanced OSGB Import

Improvements to the OSGB conversion tool to support different formats:

- Support models with DDS textures.

- Support import and conversion of multiple OSGB tiles into a single 3DML when using the *.filelist.txt file format.

- OSGB layers can be successfully converted first to 3DML and then to 3D Tiles.

- Layers loaded at 0,0 coordinates now load in the correct location.

SGS Custom Authentication

SkylineGlobe Server provides the option for full customization of your server's authentication and authorization system. A server admin can create and provide a custom DLL that will be loaded by SGS at runtime, which includes a public class controlling user access to SGS.

Skyline also offers an out-of-the-box custom authentication implementation. Authentication requests can be forwarded automatically to a microservice based on Identity Server, which was customized for common Skyline customer use-cases, including PKI, LDAP, and OpenID.

New USB License Key

New license hardware key technology – that plugs into the USB port of your computer to allow the operation of TEP.

Bug Fixes when Publishing Project to TerraExplorer for Web

- Project published to TerraExplorer for Web now correctly displays feature layer from REST server (APPS-3956).

- Project published to TerraExplorer for Web now correctly displays video on terrain objects (APPS-3819).

New Features in Release 7.2

Export 3D Mesh to Cesium 3D Tiles and I3S Formats

TEP 7.2's new 3DML Export Tool vastly increases TerraExplorer's compatibility with external viewing and editing applications. The new tool supports export to both Cesium 3D Tiles and I3S formats, and incorporates clip polygon capabilities so you can extract a specific area of the layer for export.

Import and Convert Cesium 3D Tiles and OSGB Mesh Layers to 3DML

Cesium 3D Tiles and OSGB layers can now be imported and automatically converted to the stream optimized, 3DML mesh layer format. This enables them to be streamed with SkylineGlobe Server and merged with classification information so that you can access attribute data and perform feature layer operations on the mesh layer. Selected sections of the 3DML can be imported using clip polygons, and the new Geometric Error Factor ensures proper display of imported 3DML in TerraExplorer.

Measurement Tool Enhancements

New measurement tools offer enhanced capabilities and usability:

- GUI Improvements – New distance and area measurement tools integrate all distance measurement options in one dialog box, and all area options in another, to make it easy to perform multiple measurements, and smoothly switch between commands.

- New option to display horizontal and vertical distance measurements in 3D Window, in addition to aerial.

- Additional Display Units – TEP 7.2 expands the options for units of measure for speed and distance.
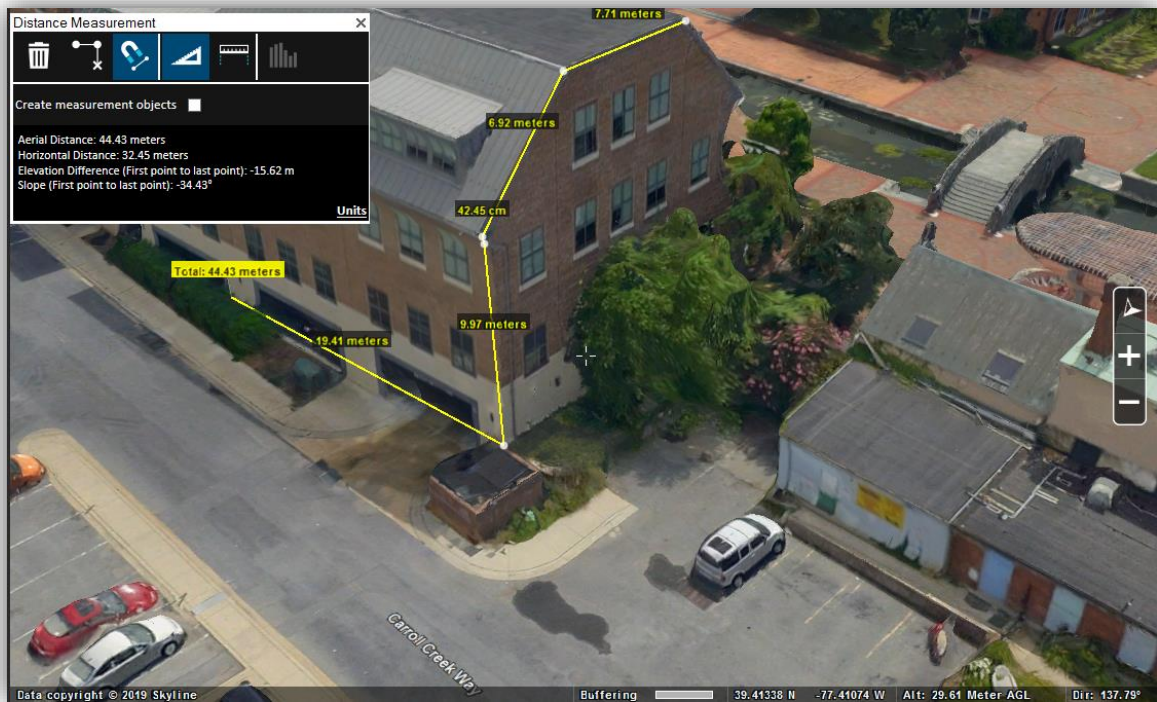
Copy and Paste Layer Styles

New styling copy-paste option saves you time and ensures consistency in your layer display.
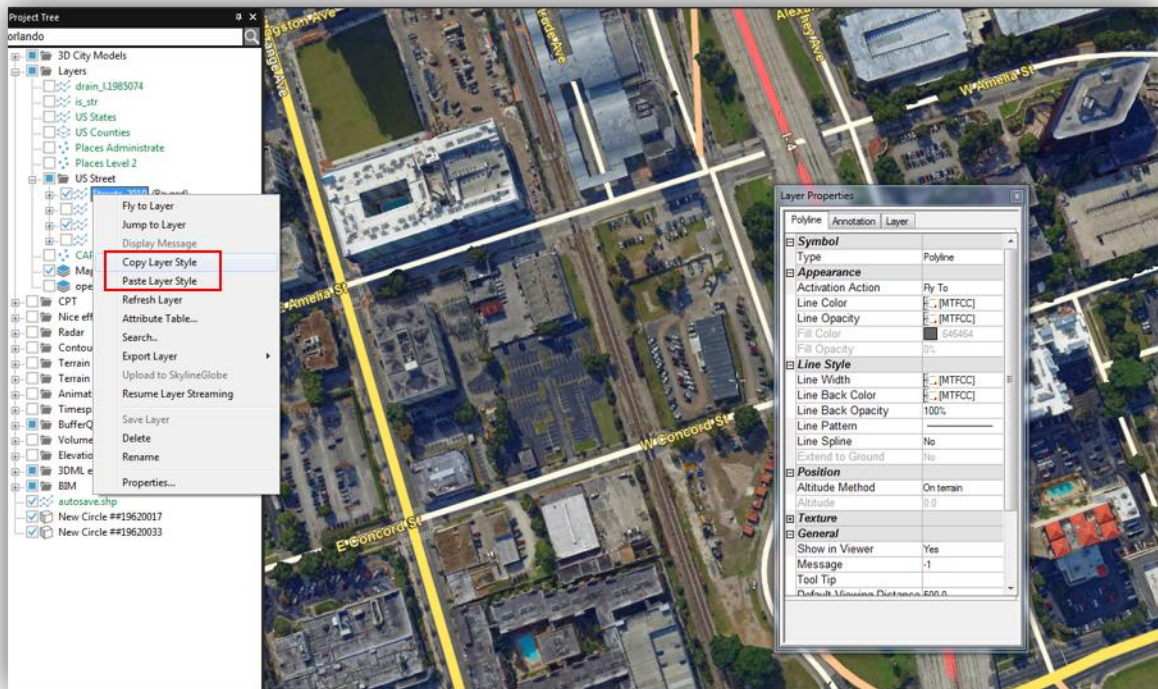
Enhanced Support for Oculus Rift VR

The new release enables users to interact more intuitively and effectively with the Oculus Rift virtual reality system, for a fully immersive experience within Skyline's actionable 3D environments:

- Support for Oculus Rift S devices

- Improved render quality and stability

- Support for navigation modes

- New virtual pointer casts ray from your hand controller to the 3D virtual world

- Support for additional elements (video on terrain, decal labels, fire/explosion/smoke effects, and more)

- Head tracking to change viewpoint

- Virtual TerraExplorer menus (measurement tools, show/hide layers, presentations, and more)

Expanded Model Formats

TEP 7.2 adds to its ever-growing list of supported 3D model formats: **OBJ**, a simple data-format that represents 3D geometry and the web optimized GL Transmission Format (**glTF)** and its binary form **glb**.

SGS Publish to TerraExplorer for Mobile

The Publish Project to SkylineGlobe Server process creates three project URL's: for TE Desktop, Web, and Mobile. The TE for Mobile URL automatically opens the new TerraExplorer for Mobile v7 app.

New Point Cloud Format

TerraExplorer has added E57 point cloud files to its list of formats supported for conversion to CPT.

Enhanced KML Support

- Support for additional tags

- Clearer, more detailed log messages

3DML Terrain Imagery and Elevation

New options enable terrain imagery and elevation in mesh area to be replaced with the mesh's lower resolution data (Simplified Mesh) instead of the 3DML's ground layer (created in 3DML from PhotoMesh).

Abort Capability for All Analysis Tools

New abort capability allows you to abort any analysis tool in the middle of calculations, thus avoiding, potentially lengthy, unnecessary calculation processes.

Bug Fixes and Stability

This release improves overall stability and performance, and provides the following bug fixes:

- Terrain profile for CPT data now displays accurately (NGN-235).

- Fixed the display of DAE Collada models with a transparency element (NGN-256).

- Corrected an issue relating to the shifting of converted LODTreeExport.xml layers (NGN-263).

- Fixed issue relating to correct display of KML's (NGN-291).

- Resolved an API bug in which QueryElevationBuffer returned a null array for low resolution MPT and small parameter values (APPS-1035).

- Corrected a Display By Attribute bug relating to attribute names containing Chinese characters (APPS-1155).

- Resolved the issues related to display of feature layers in Chinese OS (APPS-1204).

- Fixed a bug in TE Viewer 7.10 which affected the display of feature layers on local MPT (APPS-1307).

- Resolved an issue regarding altitude display when changing the altitude or altitude method of a loaded Mapinfo TAB layer (APPS-1446)

- Publishing to SkylineGlobe from TerraExplorer now succeeds even when using a port other than the default of 80 (APPS-1564).

SOFTWARE AND HARDWARE REQUIREMENTS

Operating System	Windows® 7/ 8 /10 – 64-bit.
System Memory	2GB of RAM (4 GB or more recommended).
Video Card	1 GB of video memory (2 GB or more recommended). Pixel and vertex shader v3.0.
Processor	4 cores (8 cores recommended).
Browser	Microsoft Internet Explorer 9 or higher.