

What's New in TerraExplorer® Suite 5.0

The new release of the TerraExplorer Suite marks major improvements in the capabilities for working with GIS layers. A new streaming mechanism allows connection to virtually an unlimited size of local or remote features layers. The Style and Classification editors provide advanced and efficient options for layer appearance that includes attribute conditional formatting. An Elevation Layer can now be added to replace and update the terrain elevation values, like the new version's improved Imagery Layer. Together with an new advanced polygonal rendering engine for linear terrain databases, and across-the-board updating of functionality and user interface, the new TerraExplorer suite is now more powerful than ever.

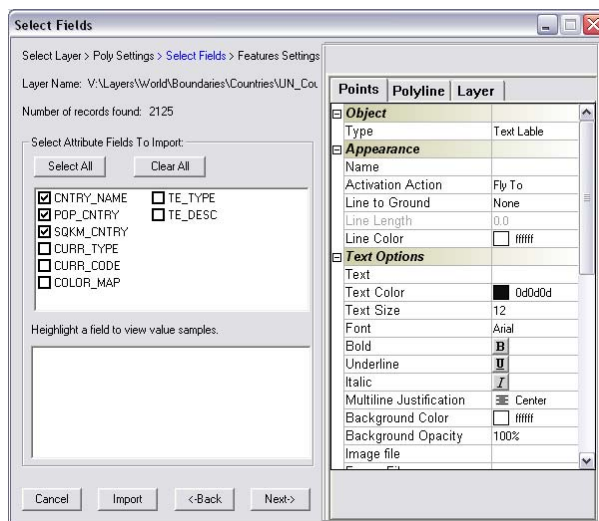
1 GIS Layers

The new Layer object defines the settings for all the items under it in an efficient manner. A layer can include points, polylines, or polygons. This infrastructure dramatically improves performance, and is the basis for the streaming layers technology listed below. It also provides better management functionality for layers containing a large amount of objects.

- Create Point, Line or Polygon layer
- Set the TerraExplorer object type to represent each record (e.g. Sphere for each point)
- Ability to change the object type assigned to each layer
- Set the style of the layer
- Added support for importing layers from WFS (Web Feature Server).

Usage:

1. Select Load New Layer from the File menu.
2. Select the layer type (Point, Polyline, or Polygon).
3. Define appearance and other settings using the Properties Sheet.
4. Click Import to create the layer in the information Tree.



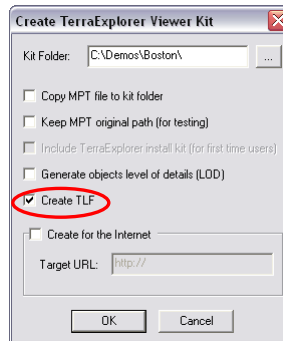
2 Feature Streaming

Feature data that is arranged in a layer is dynamically added and removed from the terrain based on the viewer's position. This streaming of data sources can be accomplished from numerous vector

servers, e.g. WFS, ORACLE spatial, ArcSDE and others. The ability to stream is also available for local FLY and shape files. With the streaming mechanism, a FLY file opens immediately and supports an unlimited amount of feature information.

Usage:

1. When loading a new layer, select the *Streamed Layer* check box.
OR, to create a streamed FLY file:
 1. Load the features information you want to a FLY file.
 2. Build a TerraExplorer Basic Kit from the File menu.
 3. On the Create TerraExplorer Viewer Kit, select *Create TLF* to generate a tiled FLY file.
The resulting set of TLF files can be opened from the local drive or posted on a web server.



3 Style Editor

- Combine all objects editing tools into a single mechanism
 - Edit a single object
 - Edit multiple objects
 - Edit group properties
 - Edit imported GIS Layer style
- Applicable to any layer object created by the GIS plugs
- Settings and properties are defined at the layer level and applied to all its members
- Marks a major improvement in performance.

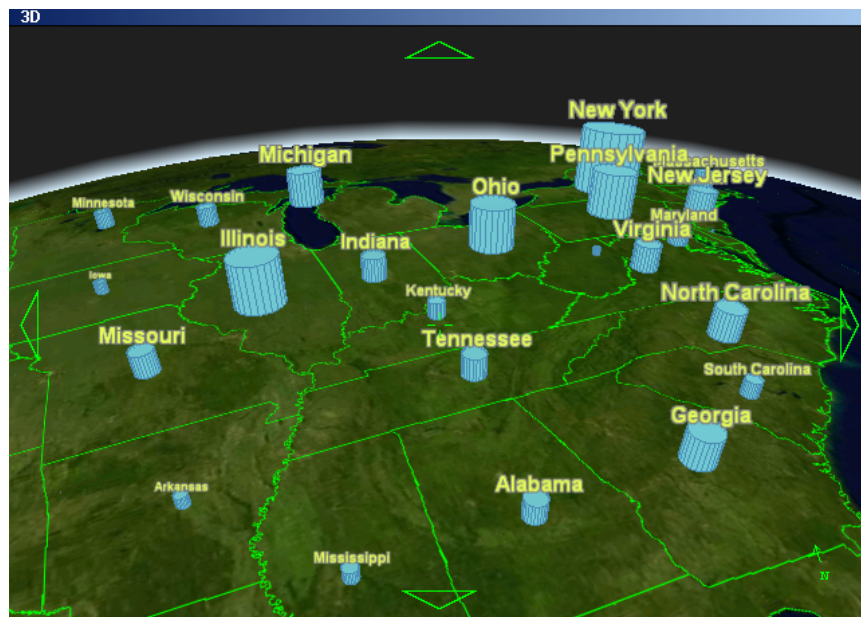
Usage:

1. Right click a layer in the information tree and select Properties.
2. Define the settings for each property.

Layer Edit	
Polygons	Layer
<input type="checkbox"/> Object	
Type	Polygon
<input type="checkbox"/> Appearance	
Name	
Activation Action	Fly To
Line Color	00ff00
Line Opacity	100%
Fill Color	646464
<input type="checkbox"/> Line Style	
<input type="checkbox"/> Position	
Altitude Method	Relative to terrain
Altitude	0.0
<input type="checkbox"/> Texture	
<input type="checkbox"/> General	
Show In Basic	Yes
Message	-1
Tool Tip	
Default Viewing Distance	500.0
Max. Visibility Distance	1000000000.0
Ground Object	No

4 Classification Editor

The Classification Editor allows defining conditional styling for layers based on a specified attribute value. (E.g. set the width of a road based on a relevant attribute value.)



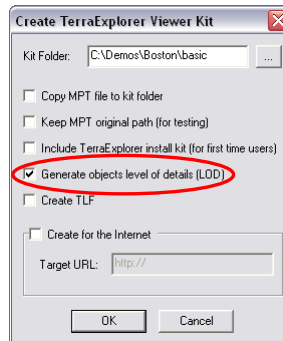
5 Multi-resolution for 3D models

Use of 3D models (i.e. X and OpenFlight files) with high-resolution textures carries a performance penalty. The new XPL and FPL formats automatically generate a set of models in diminishing texture resolution for X and OpenFlight files respectively. When the Level Of Detail (LOD) models are used in a project, the best texture scale is dynamically selected based on the visibility and proximity of the viewer.

When posted to a web server, each of the models in a set is downloaded independently, therefore increasing the performance.

Usage:

1. Load the models you want to a FLY file.
2. Build a TerraExplorer Basic Kit from the File menu.
3. On the Create TerraExplorer Viewer Kit select *Generate Objects level of details (LOD)* to generate multi-resolution models.
The resulting models are used in the created kit or in local or remote projects.



6 Animated 3D models

Added support for animated X-models.

Usage:

1. Add a new animated X file.
2. In the properties sheet for the model change the Model Type field from *Still* to *Animation*.



7 Raster Layer

- Add elevation layers to modify the underlying base terrain model
- Improved streaming performance by using multi-threading technology

- Added and updated formats
- Support for key color and null elevation values
- Support layers from Raster servers (e.g. WMS, ORACLE 10G, IWS)

Usage:

1. Select Elevation Layer from the Create Menu.
2. Browse to an elevation raster file to add it as an elevation layer.

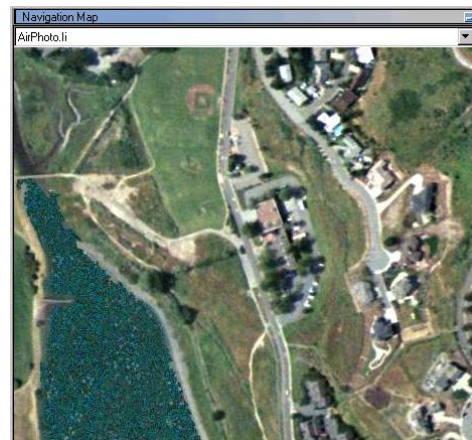
8 Planar Polygonal Engine

Planar terrain databases (MPT) rendered with polygonal technology. Similar to the globe engine, provides improved quality and performance. Takes advantage of the video card graphic acceleration.

9 Navigation Map

Improved navigation map component

- Handle local and remote raster maps of unlimited size by streaming the relevant pieces
- Automatically read geographical referencing from supporting formats
- Support additional raster formats (e.g. Tiff)
- Support multi-resolution formats (e.g. MrSid)
- Ability to reproject the raster files
- ActiveX control for embedding the navigation map in TerraDeveloper applications
- Improved user interface



10 Attributes Table search

The Attributes Table allows you to search and execute several operations on layer entities according to their attribute data and geographical location.

- Display Layer's entities and their attribute values
- Build complex search queries
- Perform operations (e.g. delete or hide) on the result.

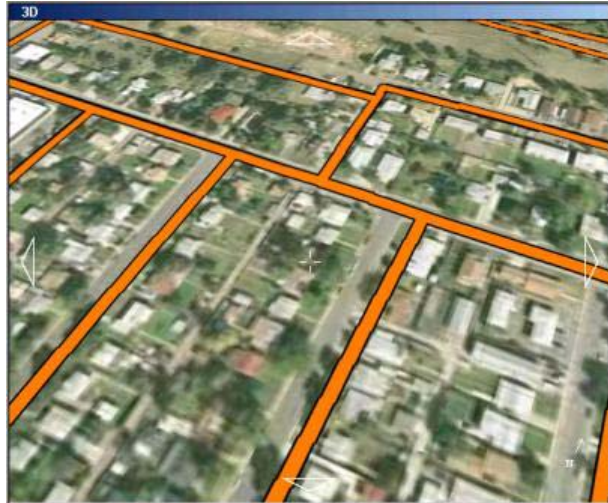
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11 Object Improvements

- **Modify 2D and 3D object geometry from the 3D window**



- **Line object**
 - **Line width**
 - **Line background color and opacity**



- “On Terrain” objects remain sharp over low resolution terrain data
- Text label
 - Improved Anti-aliasing for better appearance
 - Ability to lock the label to a specific axis
- Ability to control the minimum visibility distance of an object (object will disappear when viewer zooms closer to the object)
- Terrain modifier object. (*)
- Underground objects. (*)

12 Lighting (*)

- Set Day / Night lighting
- Display Sun and sunset
- Add Lighting sources
- Shading for terrain objects

13 User Interface

- **New Navigation controls (*)**

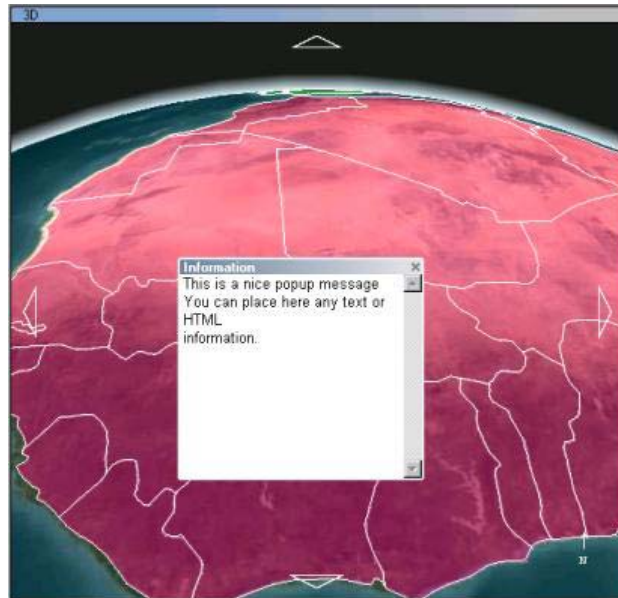
- **Compact mode – Main controls**



- **Expanded mode – All navigation controls. Replaces the Navigation Panel.**



- **Floating popup messages can be placed anywhere on the screen. Control over the caption, position, and automatic close timeout.**

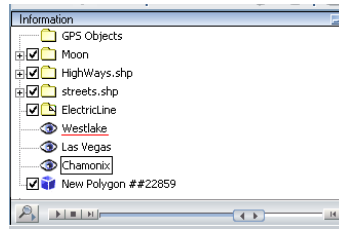


- **Re-ordered menu and toolbox controls. (*)**

- **Auto-Hide message bar (*)**



- **Slider control for dynamic objects, routes and videos (*)**



- Ability to undock containers to float windows (also usable in embedded applications) (*)
 - New compass (*)
 - Multi-links for objects – Ability to add and select message operation when clicking an object from a list of entries. (*)
- Multi-links for objects – Ability to add and select message operation when clicking an object

14 Performance and Quality

A set of new features improves the quality and performance of TerraExplorer in numerous situations.

- TerraExplorer is exposed as a COM dll (previously COM EXE) for remarkable in-process communication when embedded in host applications
- Separate Image (color) and Elevation (height) channels for improved performance
- Draw elements on terrain dramatically improved
- New smooth and fast “FlyTo” algorithm
- Objects rendering improvements (*)

15 Data Library (*)

- Additional 2D and 3D models in the data library.
- Additional GIS layers.

16 API Enhancements

- New interfaces for most components in the system

(*) – This feature will not be available for the Beta version, but is planned for completion in the final release.