



# TerraExplorer®

## Version 6 Release Notes

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## Performance and Stability Improvements

### Improved 3D Model Streaming Performance

- Handle projects with highly detailed urban model.
- New XPL2 format accelerates loading speed and reduces network traffic.
- **Reduced usage of hardware resources** - XPL2 data structure uses unified textures and model files to dramatically reduce the computer and graphic accelerator device resources.
- **Simplified (box) model** - provides fast simulation of the city building models.
- **Memory load management** – optimized models Level Of Details according to system and memory load.



**XPL2 Models**

## Improved 3D and 2D Object Performance

- Reduced feature layer memory signature - up to 50% memory reduction.
- Accelerated feature loading time
- Smooth frame rate when drawing 2D primitives on the terrain.
- Optimized flow for adding objects via API.

## Supports MPT V3

- Improved imagery and elevation quality.
- Reduced size and network bandwidth.
- Optimized for schematic maps and high-resolution elevation sources.

## Improved Complex Terrain Model

- Smoother frame rate for complex (LiDar) terrain models.
- Better support for high quality elevation layers.
- Better support for multiple elevation layers

## New Supported Formats

### New Feature Formats

- MapInfo file (Tab, Mif, Mid)
- PostgreSQL / GIS
- Microstation DGN
- Complex layer - includes points, polylines and polygons
- WFS v1.1.1
- Autodesk DXF (new versions)

## Enhanced Interoperability with KML

- Support for additional KML tags.

- Placemark icon color blending and heading.
- Placemark icon scaling and pivot positioning.
- Display text on highlight.
- Improved loading time.
- Read KML/KMZ as an alternative project file.
- Save group/project as KML/KMZ files.
- Collect and publish project to KMZ file.

## Professional GIS

### Load Features from Original Data Source

- Replaces the current “Entire Layer” concept.
- Always connect to data source (local or remote).
- Get latest updates when refresh layer.
- Multi thread process to accelerate loading time.
- Option to export layer from slow accessed remote server to fast accessed local file.
- Option to convert layer to TE objects group.
- Convert old projects automatically to new.

### Load Streaming Layer in Area

- Scan and load features from a streaming layer in a defined region.
- API to get objects.
- Ability to disable deletion process to ensure feature exists for future operations.

### Native Support for Complex Polygons and Polylines

- Support for Multi-part and Multi-patch features.
- Improved editing tools to create and modify multipolygons and polylines.
- Full API to get and update complex objects.

## Modify and Save Layer

- Update data source (Shape and SFS/WFS-T).
- Data source updating also allowed for streaming layers.

## Create new Feature Layers

- Ability to define and create feature layers directly from TerraExplorer.
- Defines layer type and attribute fields.
- Save layer to local data source (Shape file format).

## Spatial Queries

- Select features within polygon, line or point.
- Select features according to geometry of existing feature.
- Two selection types
  - Completely within
  - Intersecting with
- Supports buffering around selected shape.
- Supports also streaming layers.
  - Fetch features in area from data source.
- API to retrieve objects.

## Operations

- Edit selected features' attributes.
- Delete selected features.
- Geometry operations
  - Merge selected polylines or polygons.
  - Clip overlapping sections.
  - Create a polygon from the intersection of other polygons.
- Explode/Explode All - Explode a selected multi-part feature into all its individual, component features or separate out only specific features. This enables you to alter the attributes of only certain elements in a multipart feature.

- Full API for all operations.
- Export selected features to new layer.

## Attribute table

- Support entire and streaming layers.
- Server side queries.
- Improved and redesigned query builder makes query process more intuitive. All attribute values are listed in a drop-down list.
- Modify attributes -attribute values can be edited from the Attribute table, so that multiple feature attributes can be easily modified without opening separate property sheets for each feature.

## Operations

- Show exclusive - display in the 3D Window only features in the search results list.
- Create new layer (filter) - create a new layer composed only of the features in the search results list.
- Export items to local file - create a new feature layer composed only of the selected features.

## Search Tool

- Single search operation searches string in all attribute fields.

## Imagery & Elevation Layers

New capabilities for manipulating your raster data:

### Reads Coordinate System Code from File (WKT)

- TerraExplorer now directly reads coordinate system information from supporting raster files, and automatically reprojects the raster layer to the project's coordinate system.

## Supports Complex Clip Polygon

- Display a subsection of a raster file using a clip polygon.
- Read polygon from Shape file - load Shape file containing required clip polygon.

## Optimization

- Optimize maximum visibility distance.
- Optimization for solid (base) layers - TEP performance optimized for use of base layers.

## Null Values

- New property sheet parameter enables you to define a Null tolerance value - the permissible deviation from the specified Null value.

## Full API for All Raster Operations

## Analysis Tools

### New - Slope Analysis

Analyzes the terrain's slope and creates a slope map by applying one or both of the following to the designated area:

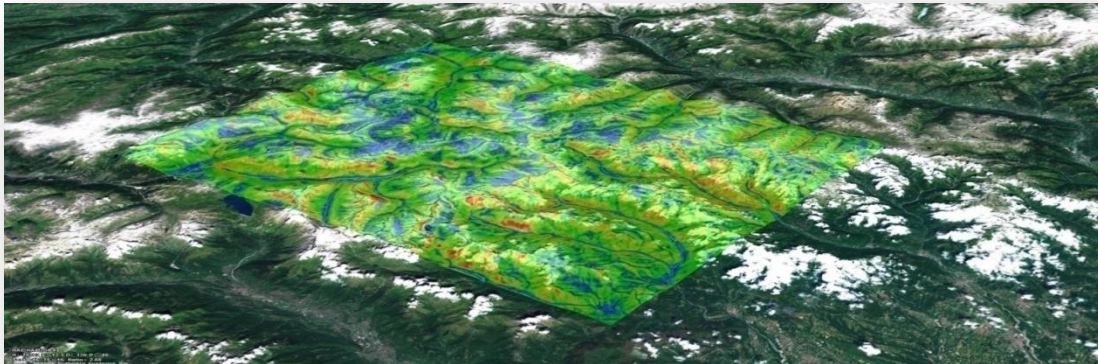
- A colored (customizable) slope palette.
- Slope direction arrows.

### Main Capabilities

- Two options for coverage area:
  - A specified rectangular area
  - The entire terrain
- Slope map legend indicates which color represents each slope range.
- Customizable appearance of map - user defines:
  - Slope palette



- Arrow color



**Terrain Slope Analysis**

## **New - Flood Analysis**

Assesses the land area covered by water in different water flooding scenarios. The result of the flood analysis process is a set of polygons showing the flooded areas.

Analysis can be performed based on either of the following scenarios:

- Single Instance - Water level rises once (initial water level set by user).
- Continuous Rise - Water level rising at a constant rate over a certain period of time (rate of rise and rise interval set by user).

## **Main Capabilities**

- Set start and end time of flooding.
- Designate area of flooding.
- Define water rise rate.

## **New - Volume Analysis**

- Calculates the amount of terrain removed or added by modify terrain objects.
- Operates on single or multiple terrain modification objects.

## **Viewshed Improvements**

- Calculated based on real model shape.

- Set target height
- Result drawn as two complex polygons.
  - Visible areas multipolygon
  - Invisible areas multipolygon
- Ability to export result to external shape file.

## LOS Improvements

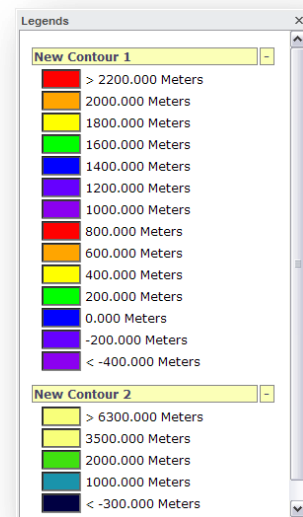
- Calculated based on real model shape.
- Edit target location and height

## Contour Map Improvements

- User defined color scheme.
- Limit contour map to altitude region by setting Min/Max values.
  - Fill out of boundaries areas with red/blue color
- Contour map legend indicates which color represents each elevation value.

## Analysis Tools API

- Create analysis tools using the API.
- Available also to TerraExplorer Plus.

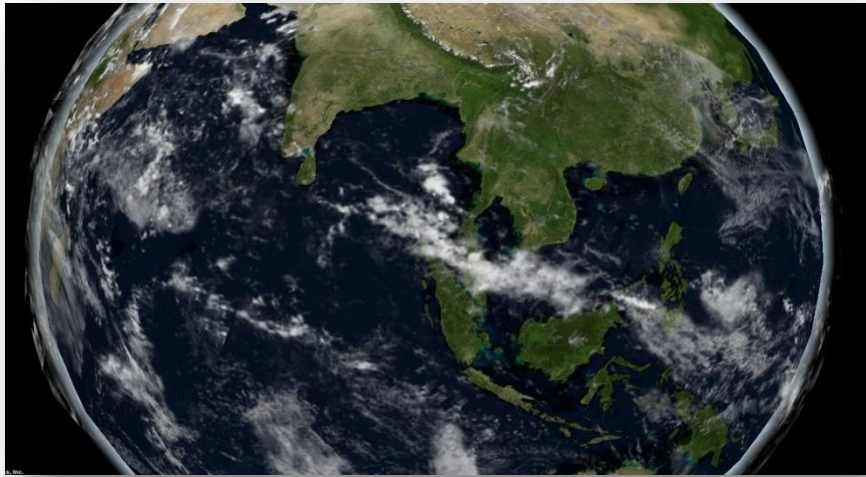


## Realistic Visualization

### Atmosphere Effects

- Sky color - Select a preset sky color based on a specified season or create a custom color. Sky color is affected by sun position and by sunset/sunrise effect.

- Sky/space texture (sky box) - Select a sky texture and cloud layer from preset options or create custom ones based on image files.
- Clouds layer
  - Set cloud altitude and movement.
  - Customize cloud position and density.
  - Option to hide cloud layer from above.



**Clouds Layer**

## Water Effect

- Reflection and movement effects.
- Global water coverage for entire globe.
  - Water coverage can be customized by the user.



### Water Effect

## Navigation Improvements

- Drag terrain while in edit mode.
  - Panning flaps removed.
- Middle mouse button rotates around cursor position.
- 2D mode integrated in TerraExplorer.
- Navigation tab combines all tools and settings.



### Navigation Tab

## Indoor Navigation

- Collision detection to all 3D models and solid 3D primitives.

- Improved indoor views editor.

## Presentation Tool

New presentation capabilities enable you to share geographical information with others through dynamic presentations. For each step in your presentation, you can set:

- Current camera position and extent.
- Visibility of items map (objects, groups), popup messages, captions, open tools.
- Timing and transition (automatic or on mouse-click).

You can also convert a presentation to a movie.

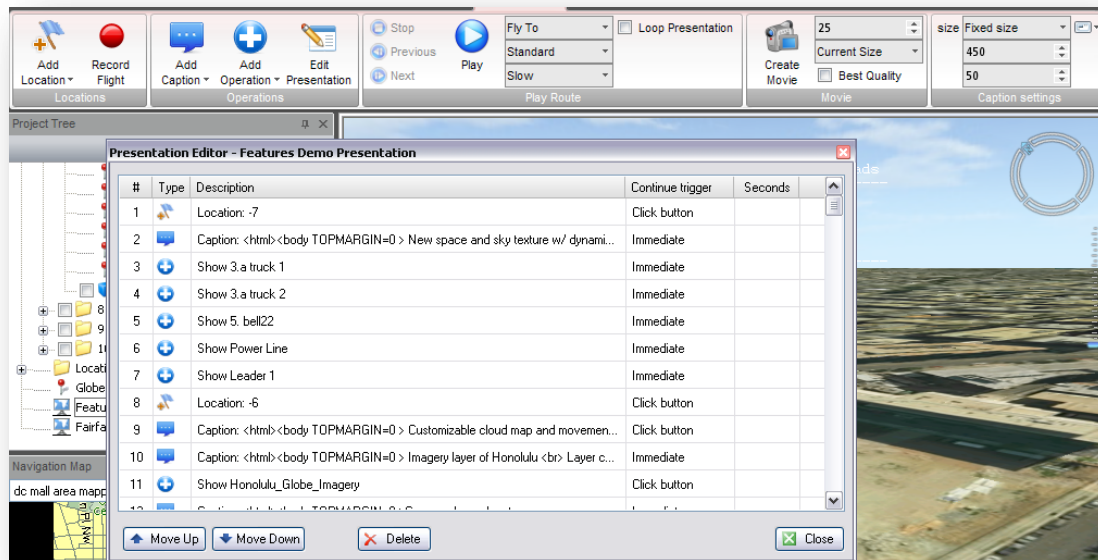
The Presentation tab displays on the Ribbon when you select a presentation from the Project Tree or when you click Presentation on the Home tab. This tab includes all of the controls necessary to create, edit and show a presentation.

## Main Capabilities

- Advanced navigation models:
  - Spline model (similar to the route).
  - Fly-to model (similar to the Fly-To).
- Two methods of creating routes:
  - Recorded - Fly through terrain recording exact route.
  - Waypoints - Add each waypoint separately.
- Activate operations:
  - Show/hide objects and groups.
  - Open TEP tools.
  - Adjust time range for group.
  - Play time animation.
  - Control dynamic objects.
  - Set underground mode on/off.
  - Create message.
  - Follow dynamic object.
  - Change flight speed.

## TerraExplorer 6 - Release Notes

- Add captions:
  - Customize size and position of captions.
- Easy to use editor:
  - Set timings and transitions.
  - Easily modify step sequence.
- Create movies.
- Presentation options:
  - Standard - Plays the presentation according to the transitions set in the Presentation Editor.
  - Auto-play - Advances from step to step automatically (play speed options).
- On screen play control



### Editing a Presentation

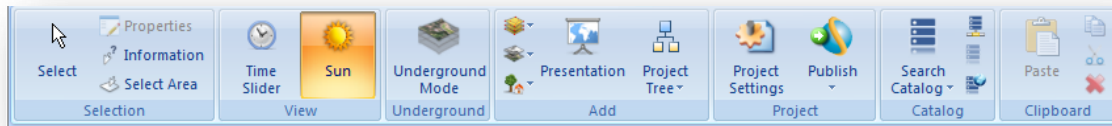
## Productivity Enhancements

### Improved User Interface

TerraExplorer's new and fluent user interface is designed to help you quickly find the commands that you need to complete a task:

## TerraExplorer 6 - Release Notes

- Menus and toolbars have been replaced by a Ribbon that organizes all commands in easily-accessible, intuitive groups, which are collected together under tabs.
- A customizable Quick Access toolbar makes the commands you most frequently use always available to you.
- Expanded tooltips help you find the command you are looking for by offering meaningful, detailed descriptions of features.

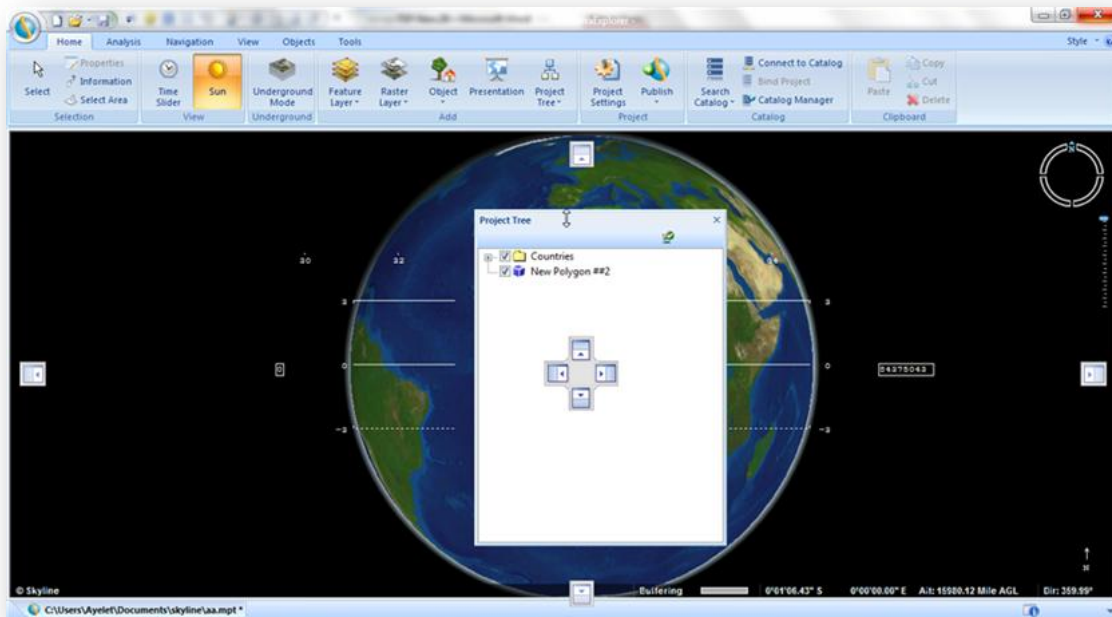


### **TerraExplorer Ribbon - Home Tab**

## Window Layout Options

- At any time during a TerraExplorer session, the Navigation Map, Project Tree, TerraCatalog or any of the TerraExplorer Tools can be repositioned on the screen so that you can create the application layout that is most convenient for you.

## TerraExplorer 6 - Release Notes



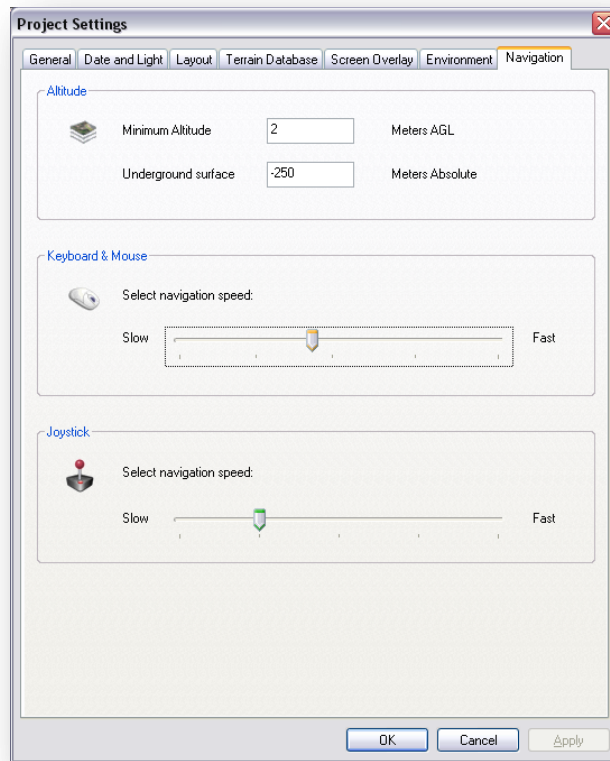
### Floating/Docking Windows

- Floating and docking windows.
- Expandable with customized tools - With TerraExplorer 6 you can add new entries to the application Ribbon control linking to your tool.
- API to control size and location.

### Project Settings

- Improved user interface.
- Simplified flight model control.
- Add screen overlay graphics.
- Define project information for catalog indexing.
- New layout control.





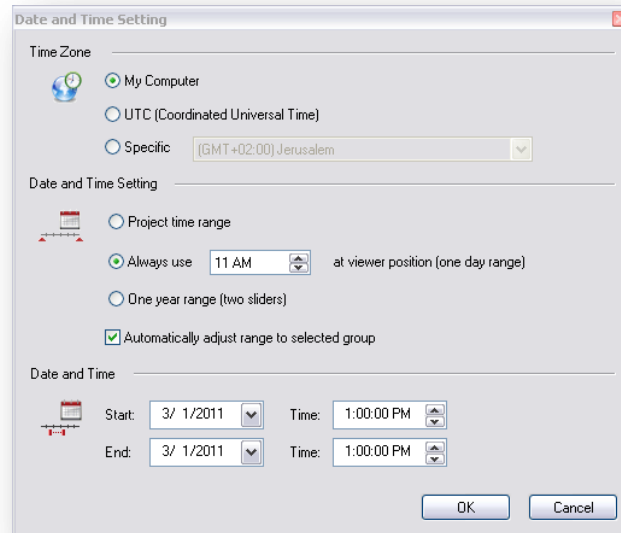
### Flight Model Settings

### Project Tree

- Single click to select item.
- Double click to fly to object.
- Double click to open group.
- New icons.
- Customize project tree control for developers

### Date and Time control

- Time range
  - Date and Time indicator supports time range.
  - Defines range for project startup.
- Automatically fade time slider when mouse outside its range.



- **Date and time setting**

## Object Improvements

### Text Label Improvements

- Image maximum size (in pixels).
- Image colorization and rotation.
- Lower memory usage for Chinese and other Unicode fonts.
- Better support for Arabic fonts.

### 3D Model

- Support for latest Sketchup format.

### Video Object Improvements

- Limit video to maximum range.
- Display video on virtual billboard

### Timespan

- Control time range in time slider.
- Start-end time values integrated in property sheet.

- Advanced timestamp setting tool.

## Highlight Effect to All Type of Objects

- Highlight effect colorizes the object in addition to selection box.

## TerraCatalog

TerraCatalog is a catalog database that stores, organizes and manages connections to raster and feature layers and projects, located in storage files or on remote servers. When TerraExplorer is connected to TerraCatalog, the catalog can easily be browsed and the required geographic data loaded into a TerraExplorer Project.

**Two Modes** are available:

- **Connect to Catalog** (only) - You can browse the catalog and load a layer found in the catalog into your project. Any modifications you make to this layer within your project have no effect on the catalog layer.
- **Bind to Catalog** (includes Connect to Catalog) - Every layer or project loaded into your project and all modifications to the project are automatically updated to the catalog every time the project is saved. When a layer in your project is based on a data source that is included in other catalogued projects, you can update those projects with your modifications. All the projects selected for update receive notification messages regarding the change the next time they are opened, promoting efficient project collaboration.

## Main Capabilities:

- Lists and maps connections to raster and feature layers and TerraExplorer projects.
- Stores raster layer properties (UPP, BBOX, Polygons etc.).
- Search tools enable searches by geographical coordinates or by any data in any of the metadata elements.
- Layers and projects can be uploaded to the catalog directly from TerraExplorer.

- Layers and projects can be loaded into your project from TerraCatalog.
- Users have option to update their project with newer catalog information or to update catalog projects based on their project's changes.

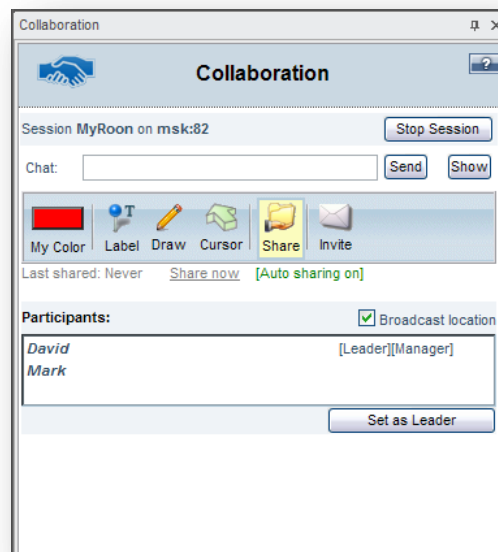
## Improved Draw Tools

### Create Pipe lines

- Create 3D pipe lines long a user-defined path.
- Create pipe lines along all lines in a selected group or layer.
- Save output as TerraExplorer group of objects or feature layer (Shape file).

### Collaboration

- Share content of group with other participants.
- Share all type of TerraExplorer objects.
- Automatically send sharing group content after any change to the group.



Collaboration

## Duplicate Objects

- Duplicate the object along all lines and inside all polygons in a selected group or layer.
- Save output as TerraExplorer group of objects or feature layer (Shape file)

## Power Line

- Create power lines along all lines in a selected group or layer.
- Save output as TerraExplorer group of objects or feature layer (Shape file)

## Timespan tags

- Evenly split a timespan, either between a group's subgroups or between all the objects in all of a group's subgroups

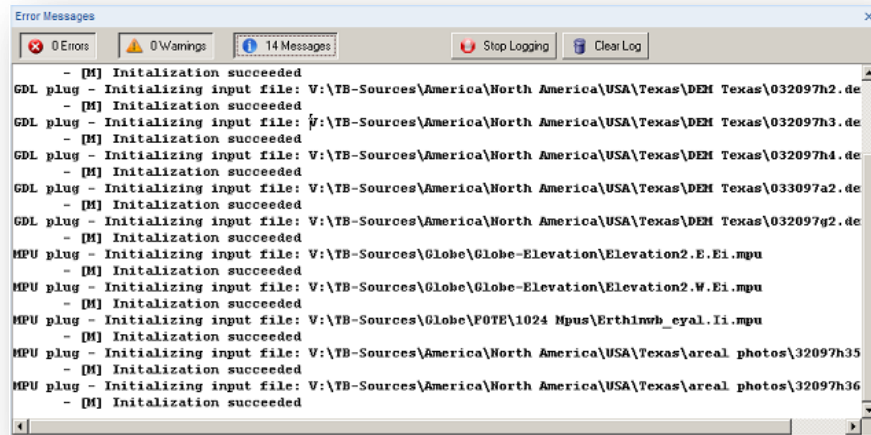
## New API

- New API interfaces:
  - User friendly.
  - Cover almost all TerraExplorer functionality.
  - Optimized for C# / JavaScript environments.
- Creating analysis tools.
- Adding and editing feature layers:
  - Complex shapes.
  - Spatial queries.
- Controlling popup window position and size.

## Error Logger

The TerraExplorer log records and displays warnings, messages, and errors to help you troubleshoot any TerraExplorer issue. Log files can be exported and sent to Skyline support:

- **Warnings** - Alerts users of a condition that might cause a problem in the future.
- **Messages** - Records all activity involving external sources.
- **Errors** - Alerts users of a problem that has already occurred.



**Error Logger**

## New Installation

- Based on standard InstallShield technology.
- Registry free installation:
  - OEM products do not need to run TE installation or perform DLL registrations.

## Localization for TerraExplorer

By separating all resources from the source code, TerraExplorer simplifies the translation of user interface text and graphics.

- Localization for all TerraExplorer versions (Pro, Plus and Viewer).
- Support Unicode characters allowing project with different character sets.
- Translate all text and graphic to native language.

- Customize dialogs and resources (Using Lingobit Localizer).
- Localization done by local partners.

## **TerraExplorer Viewer Capabilities**

- Create groups
  - Capture tree state
  - Add locations
  - Add presentations
- Create movies
- Load Fly Layer
- Load KML / KMZ layer
- Add objects
  - Text and image label
  - Polyline
  - Polygon
- Analysis tools
  - Viewshed
  - LOS
  - Threat dome
  - Contour maps
  - Slope analysis
  - Flood analysis
  - Volume analysis
- Shadow analysis
- Indoor editor
- Save (and save as) the project
  - Create TerraExplorer Kit is not available

- Save project/group to KML/KMZ
- API to the all viewer new capabilities

## **TerraExplorer Plus New Capabilities**

- All Viewer capabilities
- Pro API (except disabled commands)
- Add imagery and elevation layers
  - All supported formats
  - Ability to edit the layer using the properties sheet
  - Add feature layers
    - All supported formats
    - Ability to edit the layer styling using the properties sheet
    - Layer Edit tab is not available (No operations like spatial query, feature editing or attribute table)
    - No ability to save changes in feature layer or export it to a new layer
    - No ability to create new feature layers

## **System Requirements**

- Operating System - Windows XP/Vista/7
- System Memory – 1GB RAM (4GB or more recommended)
- Video Card - 128MB of memory (512MB or more recommended)
- Internet Connection - Broadband connection
- Browser - Microsoft Internet Explorer 6 or higher should be installed on machine