

Applying the Side-by-Side

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Introduction

- DESCRIPTION

- The SbS is a versatile tool designed to perform visual database comparisons. SbS is a powerful tool that enables the simultaneous visual inspection of multiple SEDRIS transmittals in an intuitive, easy-to-use manner. This tutorial will demonstrate the key features of SbS, and will show how the tool supports the visual comparison and identification of discrepancies of multiple environmental databases. The discussion will cover how differences between transmittals may be corrected.

- WHO SHOULD ATTEND

- Environmental modelers and software engineers interested in the interpretation of environmental data using SEDRIS-based tools and utilities, those who intend to design and implement other SEDRIS-based conversion applications, tools or utilities that operate on SEDRIS transmittals, or anyone who is interested in learning how to use the SbS.

- WHAT TO EXPECT

- At completion, the attendee will have an understanding of the SbS, how it is used to identify discrepancies, and what additional functionality future SbS Viewer Plug-ins will bring.



Prerequisite

- To get the most from this tutorial, we assume you know the following information as a prerequisite to this session:
 - A solid understanding of the SEDRIS technology components and how they fit together. We assume you have attended: *“Introduction to SEDRIS for Managers”* or *“Fundamentally SEDRIS: The Technology Components”*.
 - A basic understanding of the database formats: CTDB, OpenFlight, VRML and DTED are a plus.
 - A familiarity with 3D graphics.

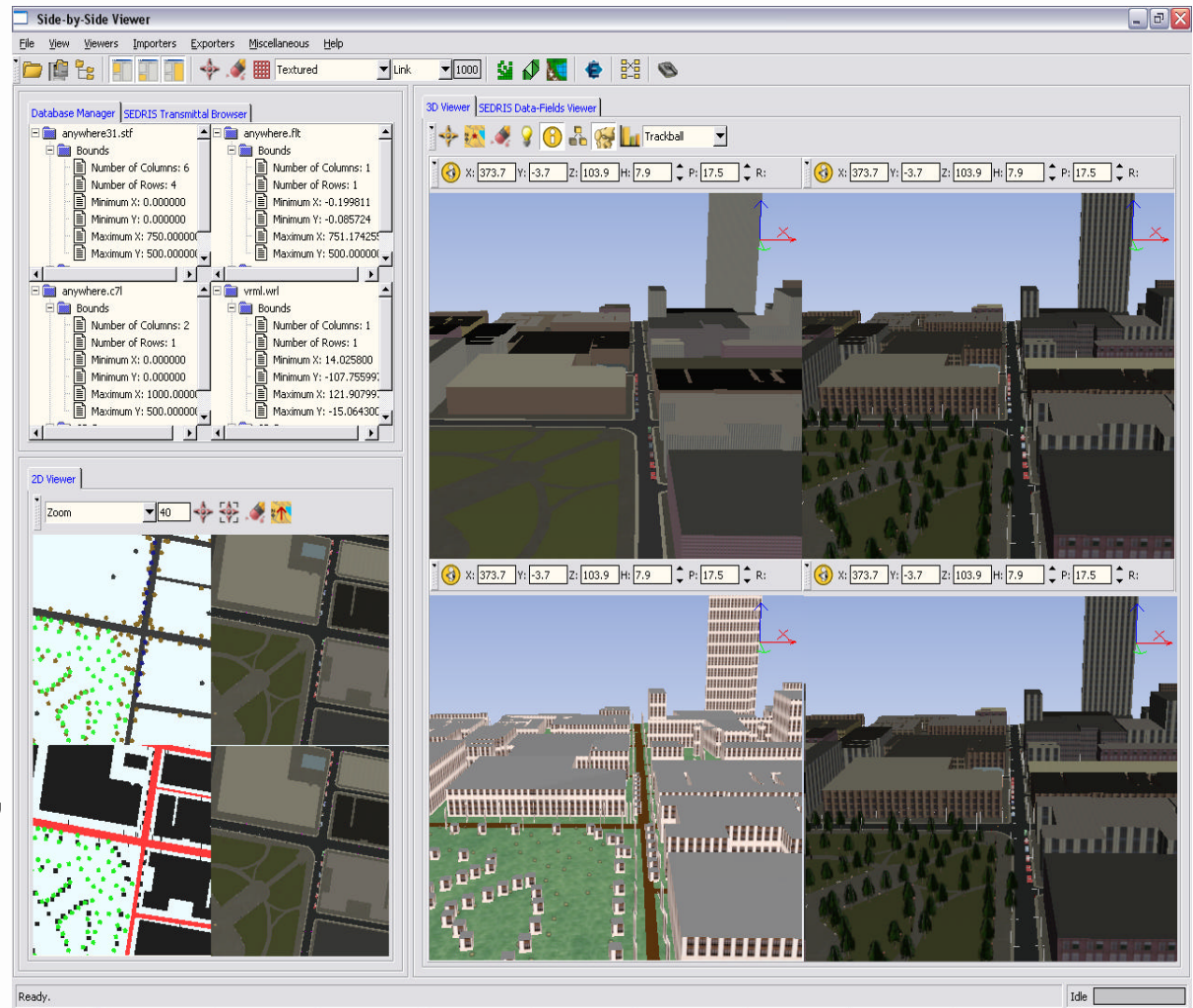


Tutorial Outline

- Ø **What is Side-by-Side**
 - Ø **Overview (Features at a glance)**
- Ø **System Requirements**
- Ø **Plug-in Architecture**
- Ø **Database Manager**
- Ø **General Viewer Options**
- Ø **3D Viewer**
- Ø **2D Viewer**
- Ø **Importers**
 - Ø **SEDRIS**
 - Ø **OpenFlight / Performer / VRML / CGM**
 - Ø **CTDB**
 - Ø **DTED**
- Ø **Filename Template Loading**
- Ø **Adding/Removing File Paths**
- Ø **Correlation Report Generator**
- Ø **Evolver**
- Ø **Exporters**
 - Ø **OpenFlight**
- Ø **Plug-In SDK**
- Ø **Where To Go From Here**

What is SbS

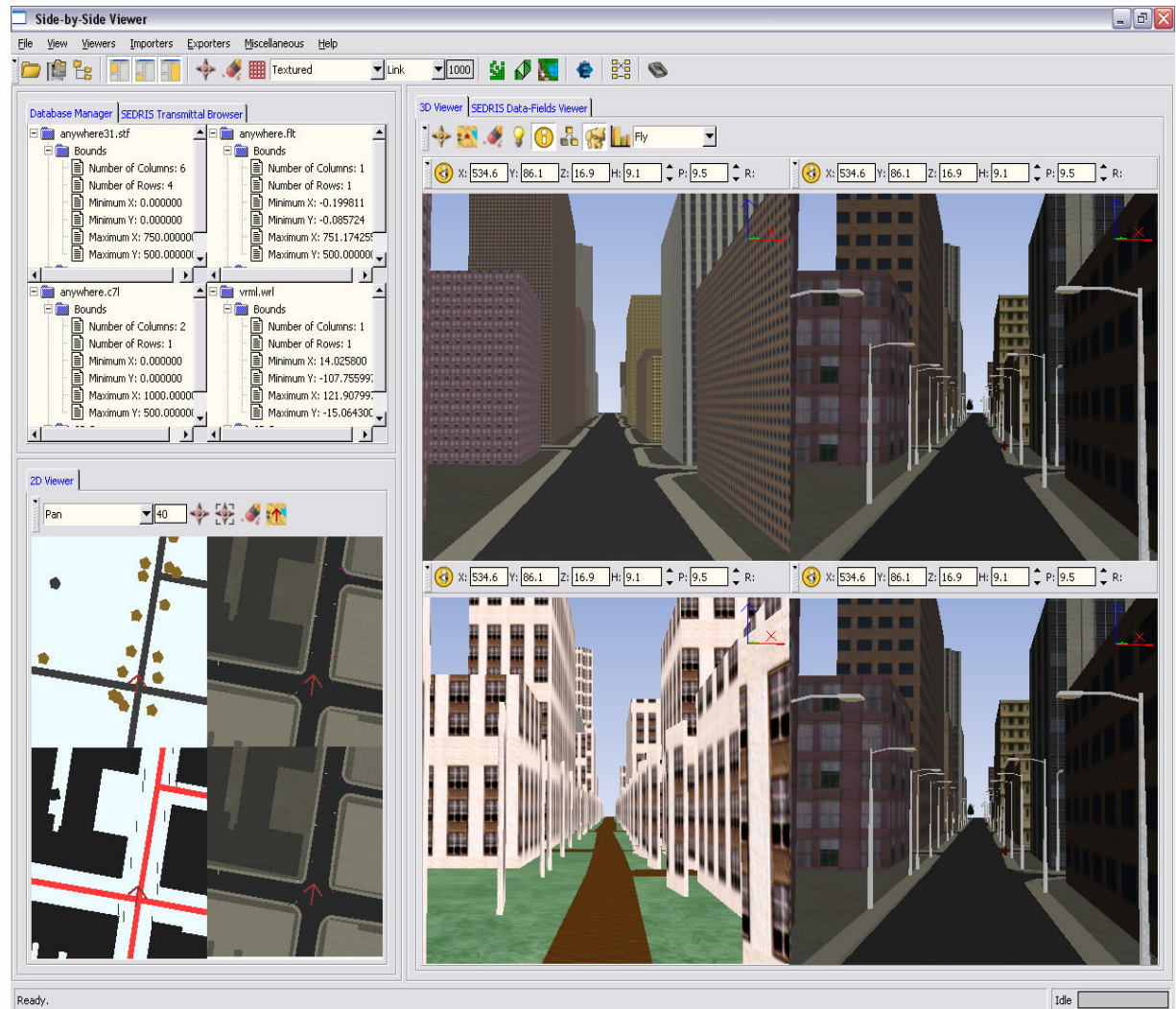
- Side-by-Side is an application that provides inspection, correlation, intensification and conversion features.
- Side-by-Side was developed by AcuSoft engineers, and is provided as a free tool.



Databases, courtesy of VERTS project

What is SbS: Overview

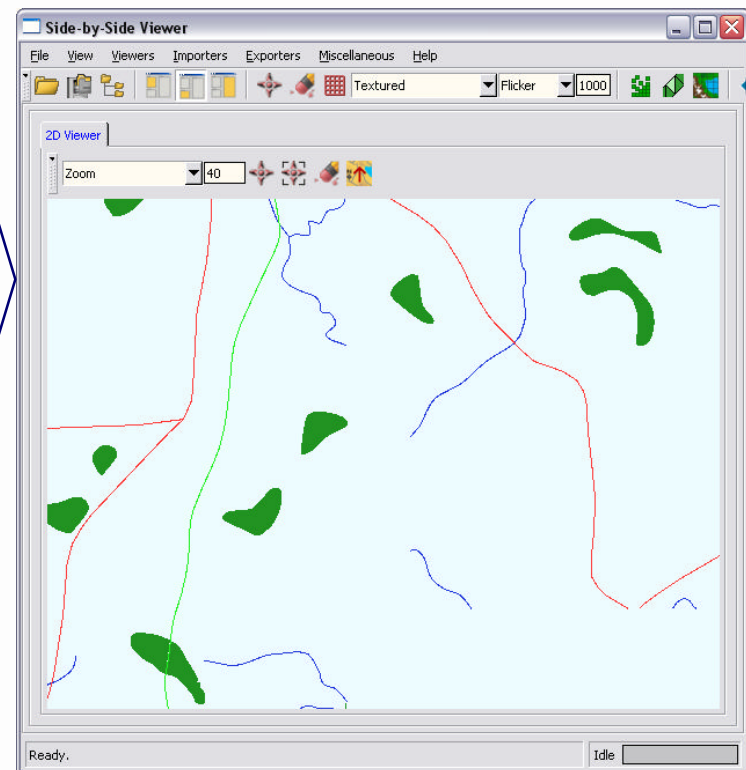
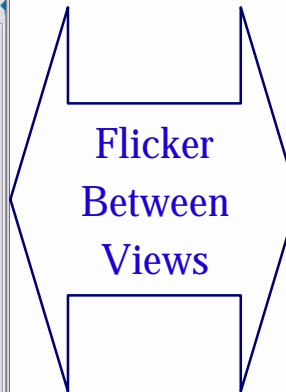
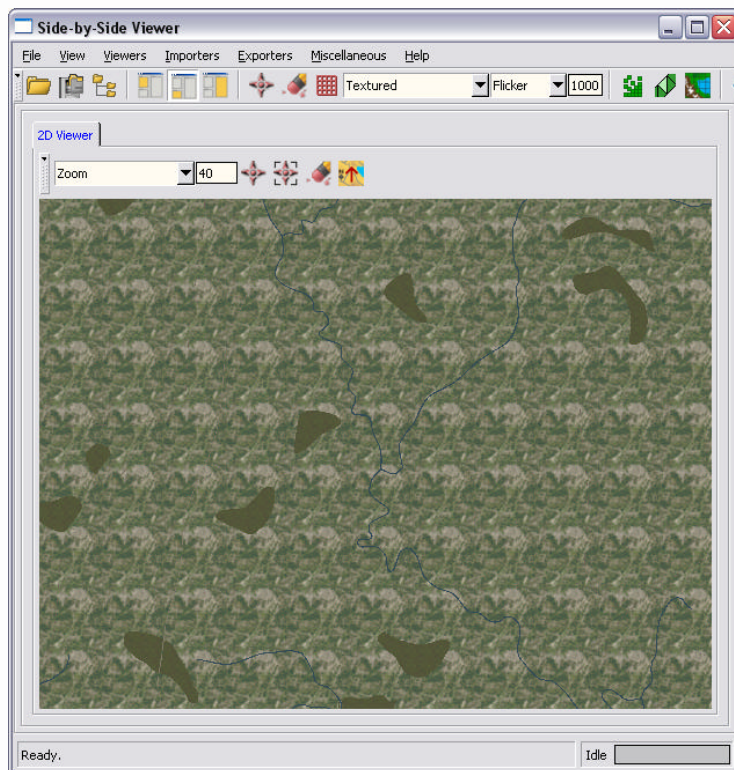
- SbS provides a way to compare:
 - STF
 - CTDB
 - OpenFlight
 - VRML
 - Performer
 - Or any other format made available via Plug-Ins.
- The screen-shot to the right shows:
 - An STF db in the upper-left.
 - An OpenFlight db in the upper-right.
 - A CTDB on the bottom-left.
 - A VRML db on the bottom-right.



Databases, courtesy of VERTS project

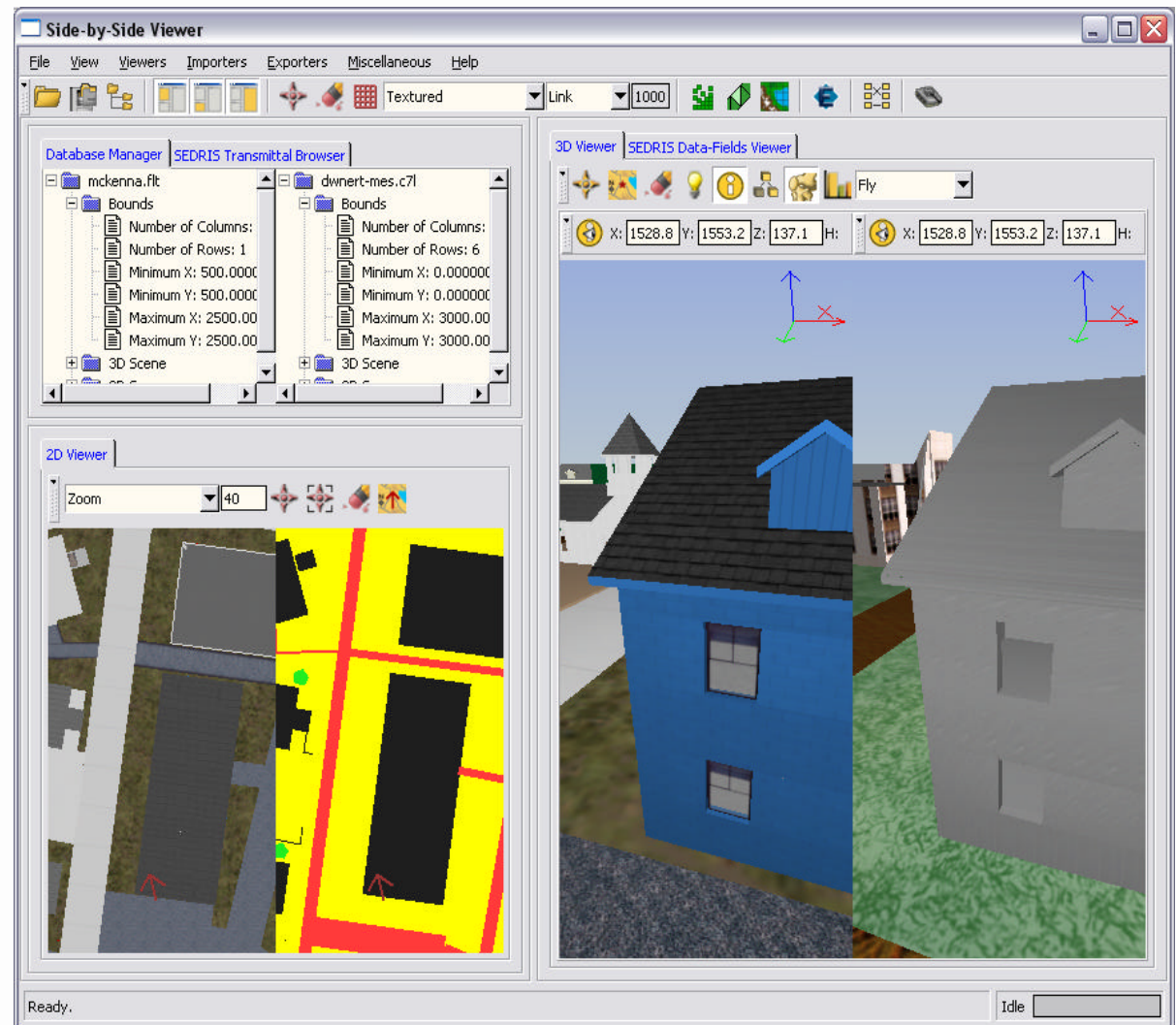
AcuSoft What is SbS: Overview (cont.)

- Ensure correlation between SAF and Visual Formats.
- Flicker between views (in 3D or 2D) to spot correlation problems.



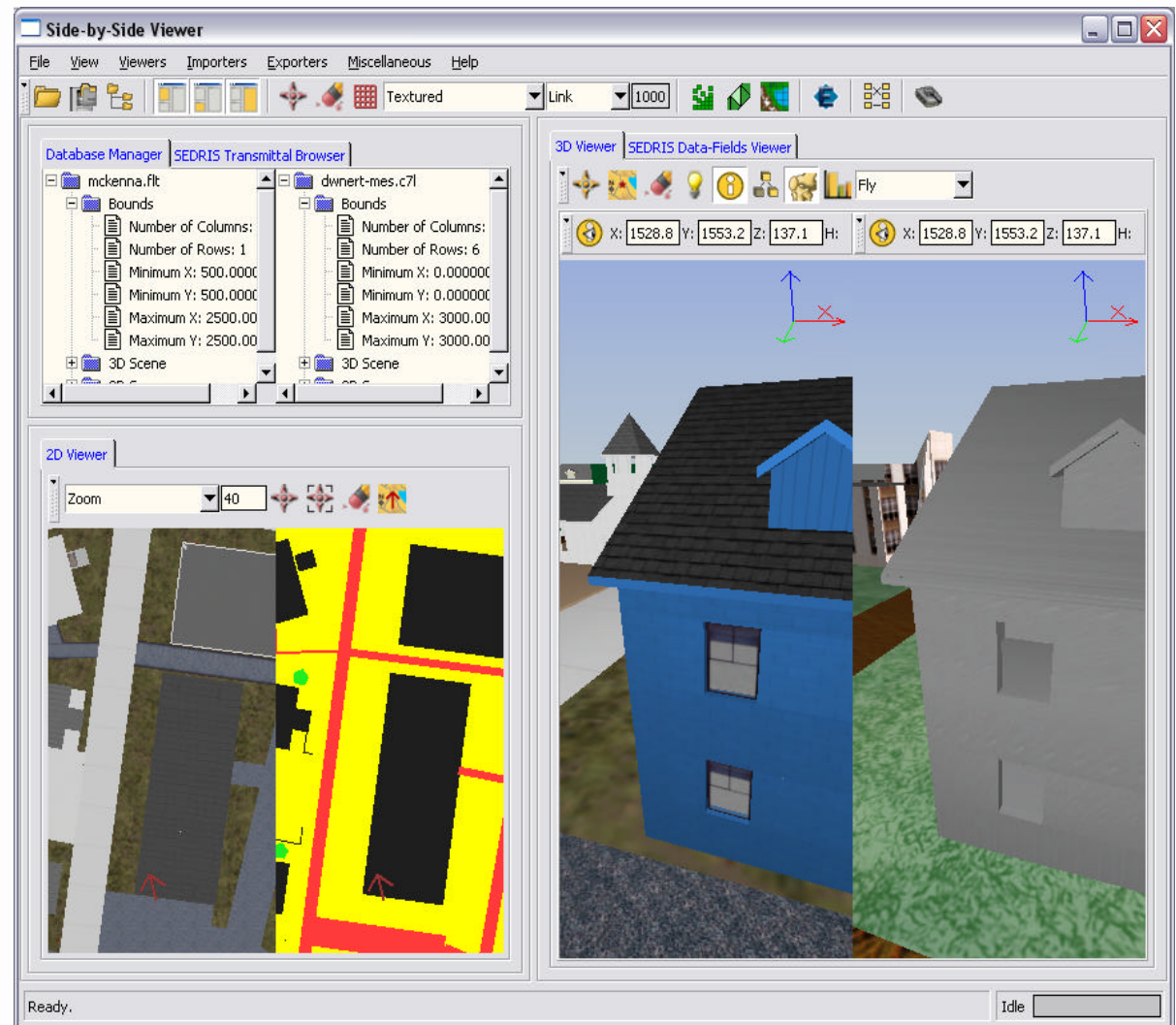
AcuSoft What is SbS: Overview (cont.)

- Build a complete 3D representation from CTDB
- Compare the CTDB against the visual representation.



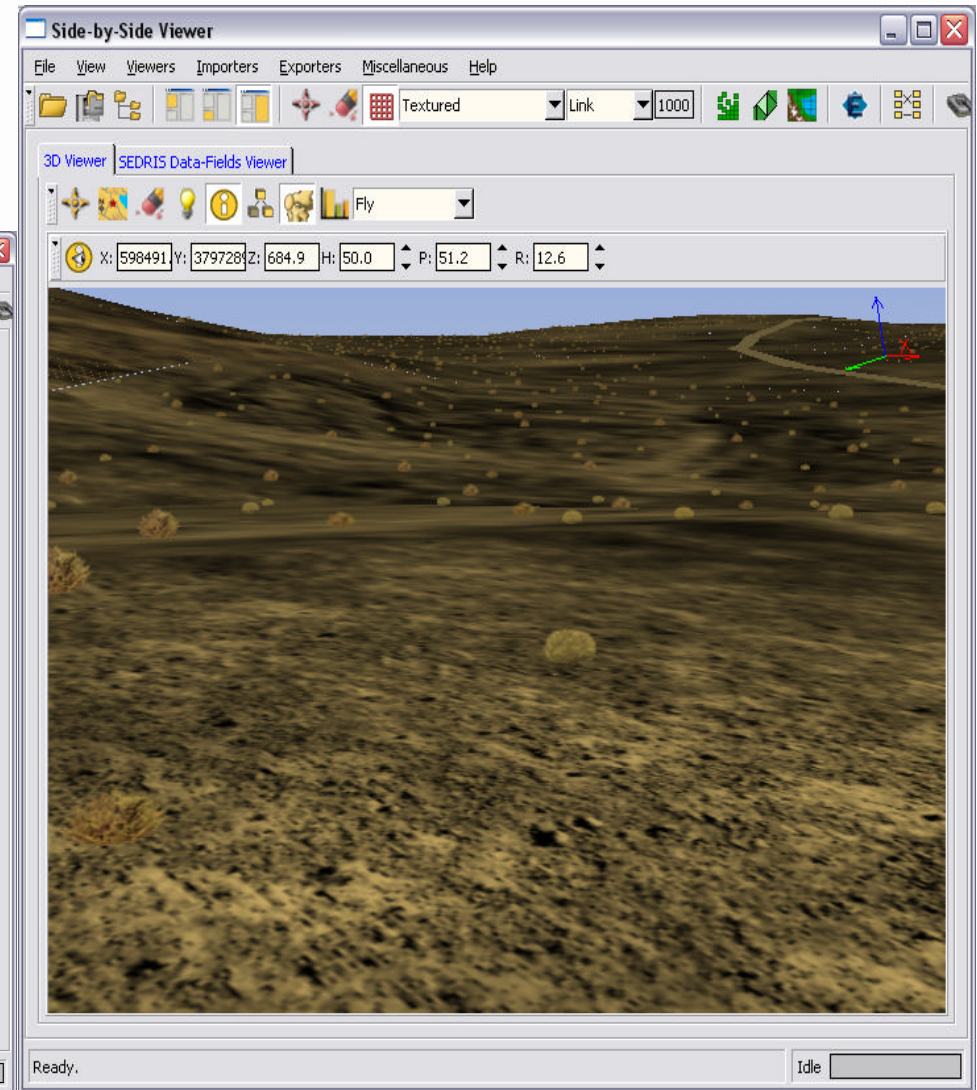
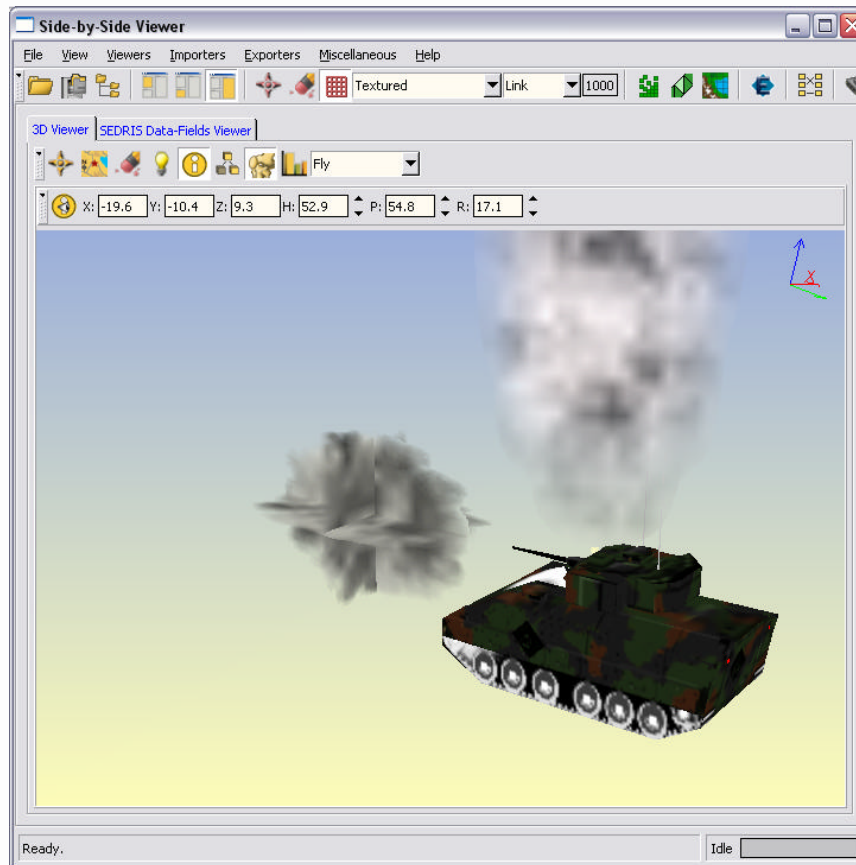
AcuSoft What is SbS: Overview (cont.)

- Export any imported database into:
 - OpenFlight
 - AcuScene
 - Other formats available via the Plug-In Architecture.



AcuSoft What is SbS: Overview (cont.)

- Supports CCTT STFs
 - Terrain
 - Moving Models





System Requirements

- Supports Windows NT/2000/XP and Linux
- OpenGL accelerated video card for 3D viewing
- Memory and processor speed requirements are dependent on database complexity

Plug-In Architecture

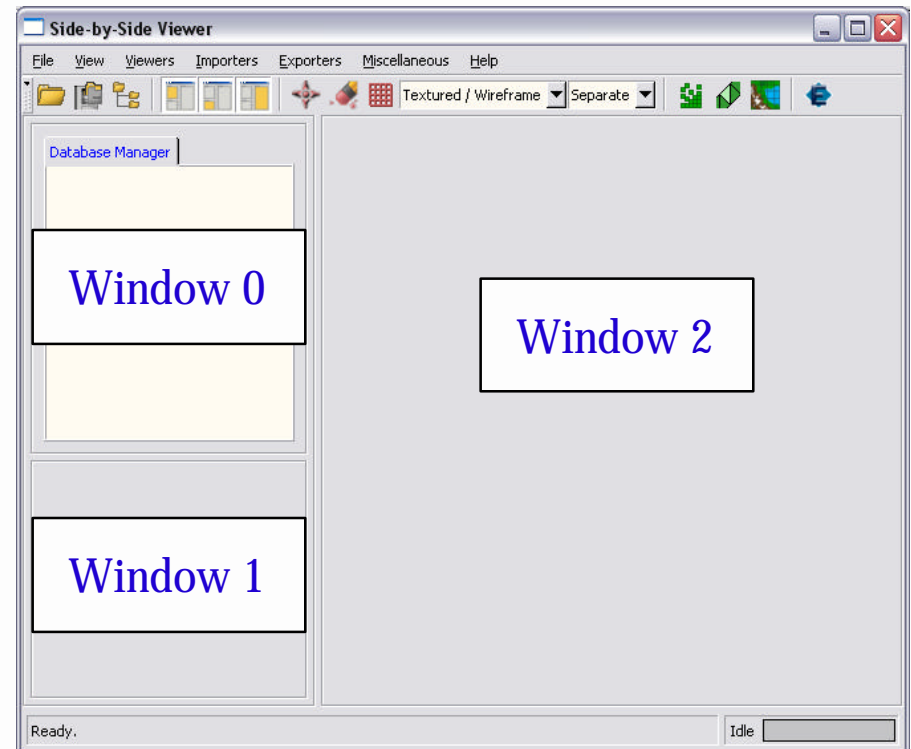
- Side-by-Side is designed as a Plug-In Architecture.
- Almost all functionality is provided through Plug-Ins.
- Plug-Ins can be enabled and disabled from an ASCII file.
- An example of the Plug-In list is shown below:

SbS3DViewer.dll:2

SbS2DViewer.dll:1

SbSCTDBImporter.dll:-1

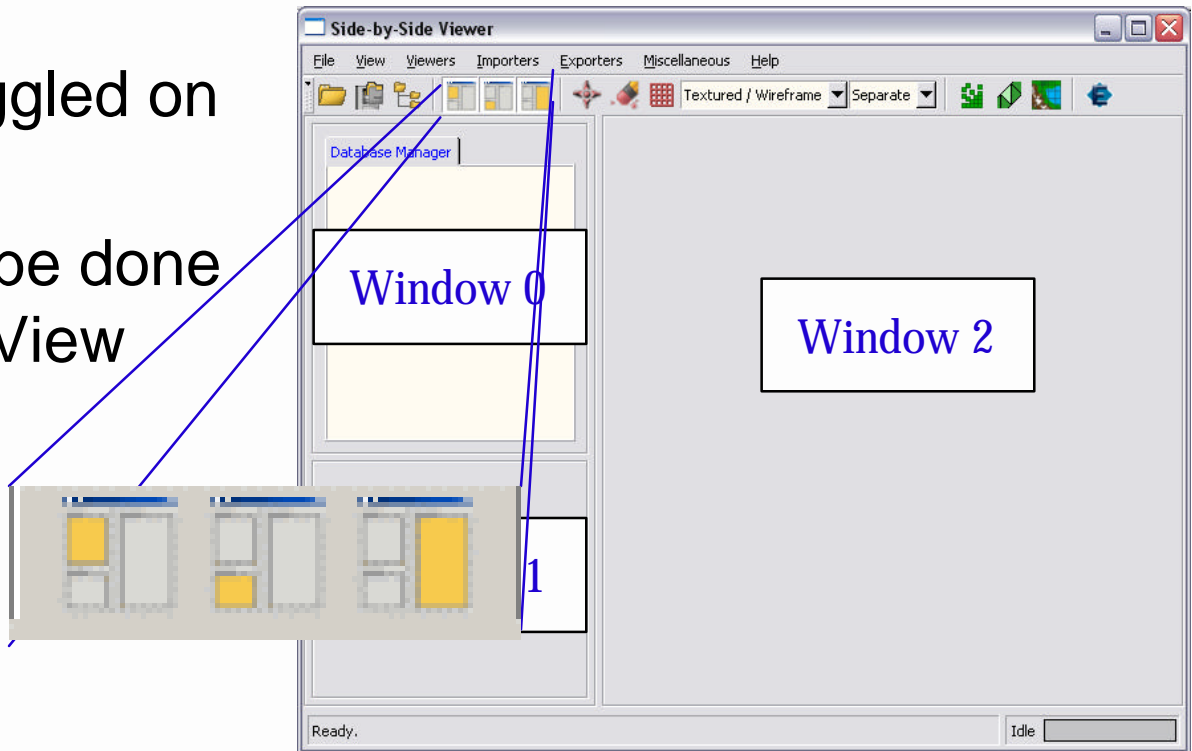
- The number at end of the line indicates, which tab window to attach the Plug-In's window.



Side-by-Side with no plug-ins loaded

Window Management

- The three main tab windows can be toggled on and off.
- This operation can be done from the toolbar or View menu bar.

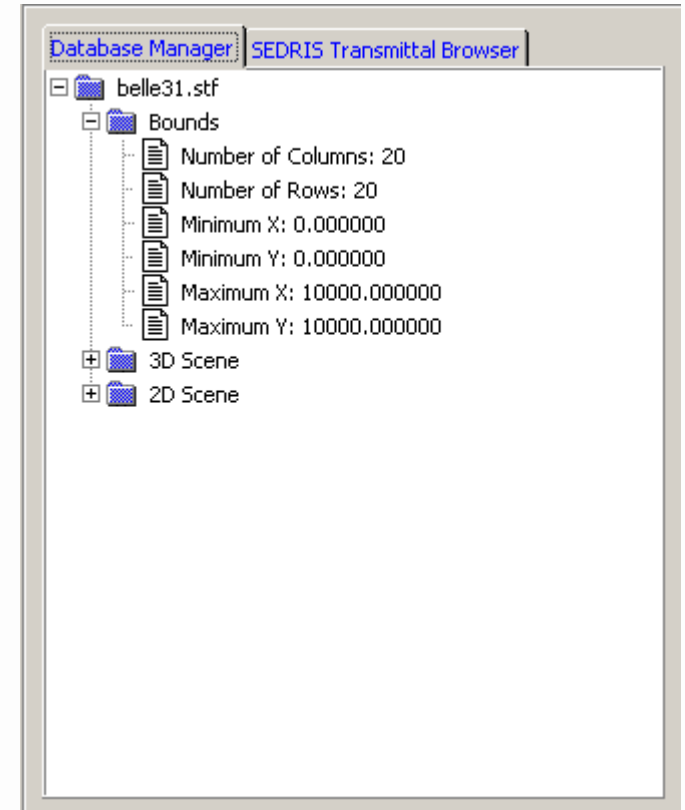


Side-by-Side with no plug-ins loaded



Database Manager

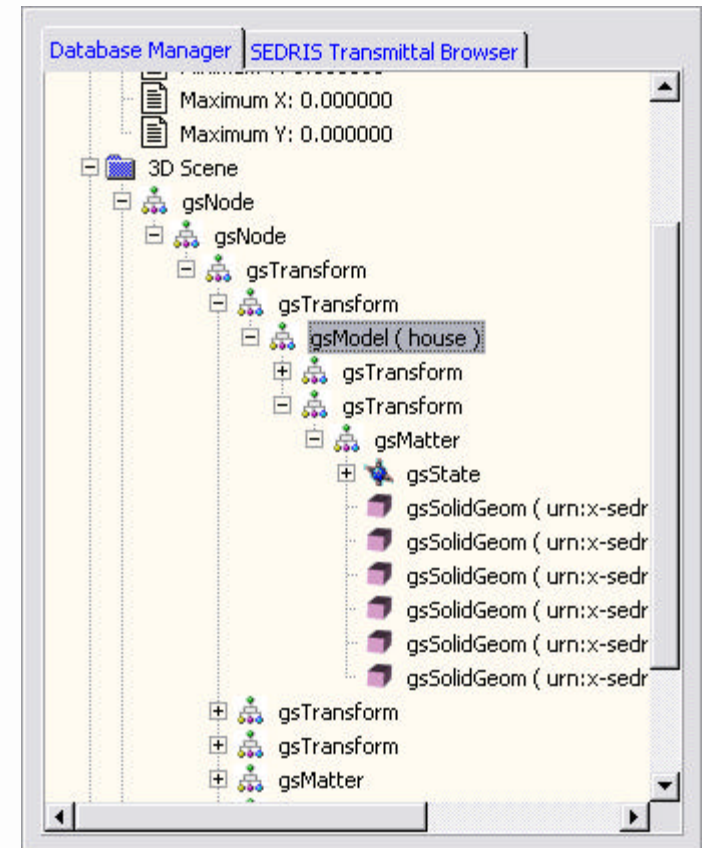
- The Database Manager is a Plug-In used to organize and give information about all open databases.
- The Database Manager is a standard SbS Plug-In.
- This means that it cannot be disabled.
- Provides Database Information:
 - World Bounds
 - Tile Dimensions
- Database Manager Topics:
 - Scene Hierarchy
 - Properties Dialog
 - Optimizations
 - Statistics
 - Terrain Loading Dialog





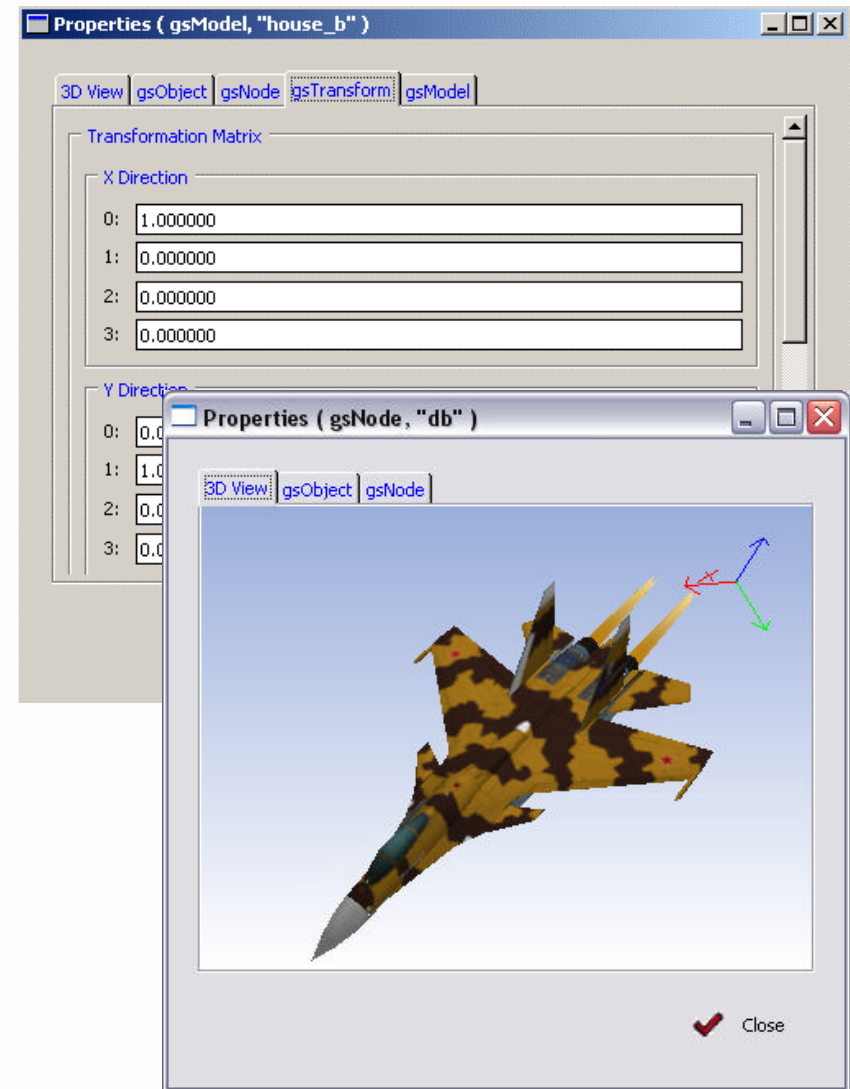
Database Manager: Scene Hierarchy

- The Scene Hierarchy is used to browse AcuSoft's scene-graph.
- There are two main scene-graph branches.
 - 3D Scene
 - 2D Scene
- For some database formats, the 3D and 2D may be sharing the same scene-graph.



Database Manager: Properties Dialog

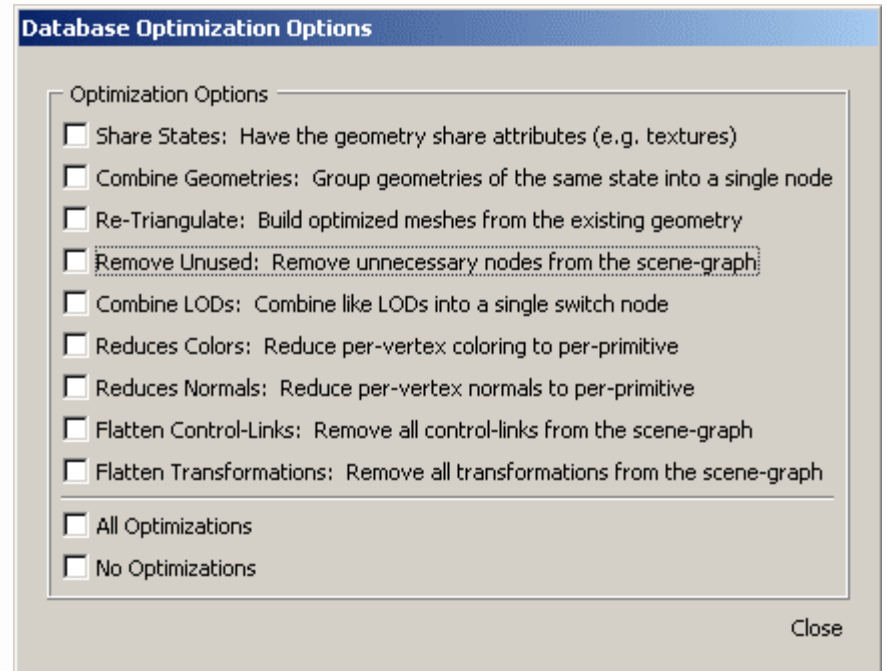
- By right clicking on an object in the scene-graph a menu bar will pop-up.
- Selecting “Properties” from that pop-up will bring up the “Properties Dialog”.
- This dialog will be populated with fields for the particular object type selected.
- The 3D View Tab is used to view from the selected scene-graph object down.





Database Manager: Optimizations

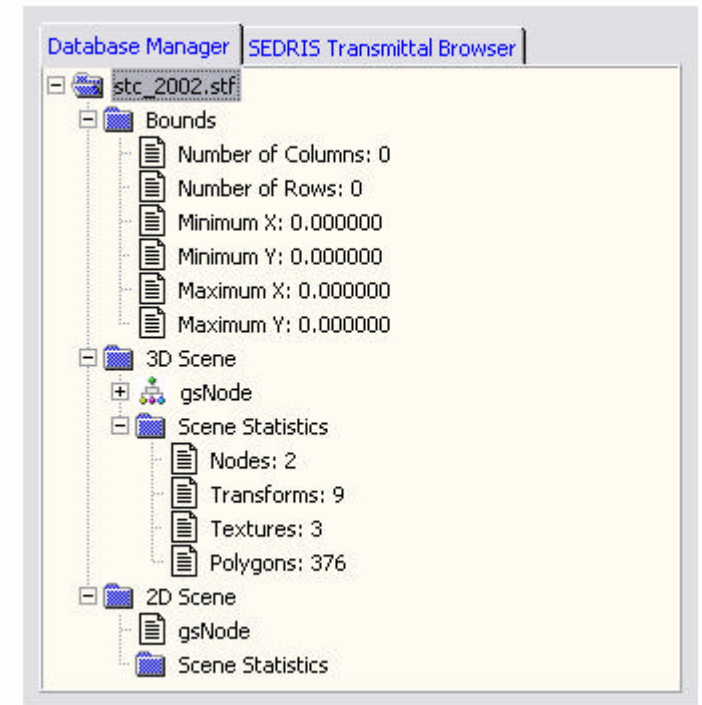
- To achieve better rendering performance, or to simplify the scene-graph, user's can execute optimizations.
- After right-clicking on a scene-graph object, one can also select "Optimize".
- This will "Optimize" the scene-graph, based upon the selected Optimization Options.
- The Optimization Options are set from the Optimizations Dialog.





Database Manager: Statistics

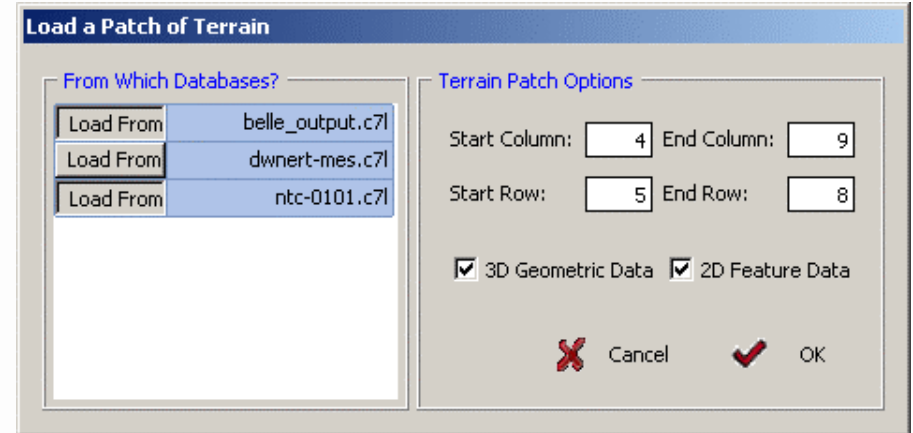
- Under the *3D Scene* and the *2D Scene* there is a folder labeled “Scene Statistics”.
- By right-clicking and then selecting “Generate Statistics”, the Database Manager will display information about scene-graph contents.
- The following information will be displayed:
 - Node Groups
 - Transformations
 - Switches
 - Range Switches (LOD)
 - State Switches
 - Textures
 - Polygons





Database Manager: Terrain Loading Dialog

- If the database is organized in a tile organization (e.g., a CTDB), one can select particular tiles, by column and row, to load.
- The dialog is titled “Load a Patch of Terrain”.
- Specify the column and row bounds, along with whether 3D and/or 2D data should be loaded.
- (See 2D Viewer for an easier way to select tiles.)



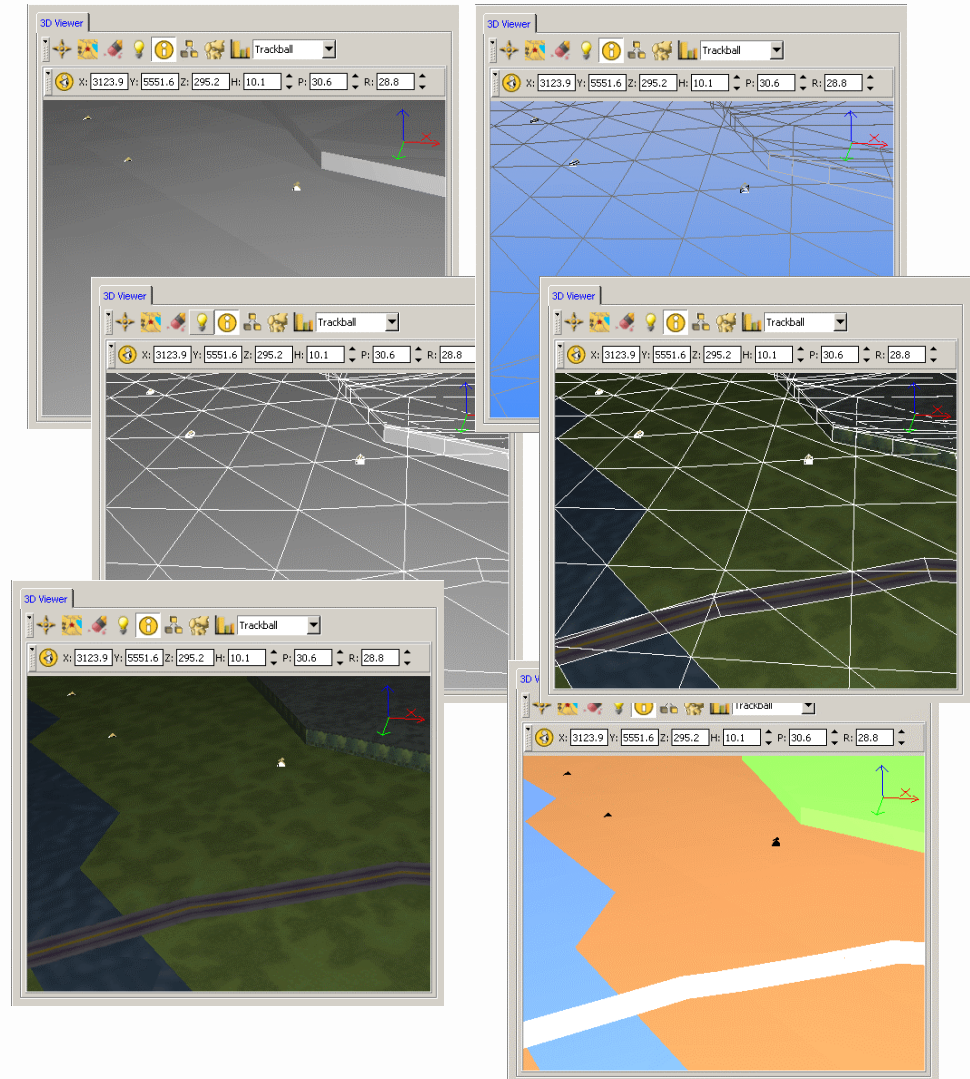


General Viewer Options

- Some options for viewing should be applied to all Viewer Plug-ins.
- These options direct each Viewer Plug-In's behavior.
- The General Viewer Options include:
 - Rendering Mode
 - Views Mode
 - Reposition
 - Grid Toggle

General Viewer Options: Rendering Mode

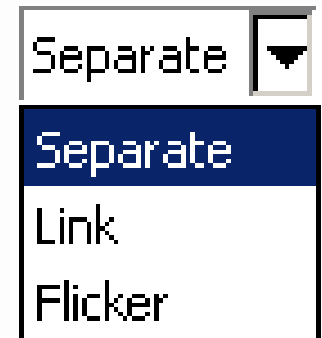
- The Rendering Mode is used to specify how the geometry and feature data should be displayed.
- The possible modes include:
 - Solid (no Textures)
 - Textured
 - Wireframe
 - Solid and Overlaid-Wireframe
 - Textured and Overlaid-Wireframe
 - Points
 - Classification Colors
- Classification Coloring will only work for databases that contain classification information (e.g., CTDB and STF).





General Viewer Options: Views Mode

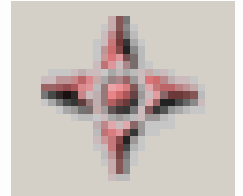
- The Views Mode is used to instruct the Viewer Plug-In's how their Views (one corresponding to each open database) should be arranged and/or behave.
- The modes include:
 - Separate
 - Each view operates independently from all other views.
 - Link
 - All views lock to the same position.
 - Flicker
 - Cycles through each channel giving a single channel all of the window's space for a fixed amount of time.





General Viewer Options: Reposition

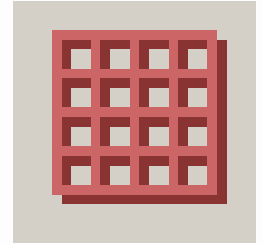
- It is often useful to reset the position to an optimal view.
- Providing this feature as a General Option allows one to force all Viewer Plug-Ins to reset their views.



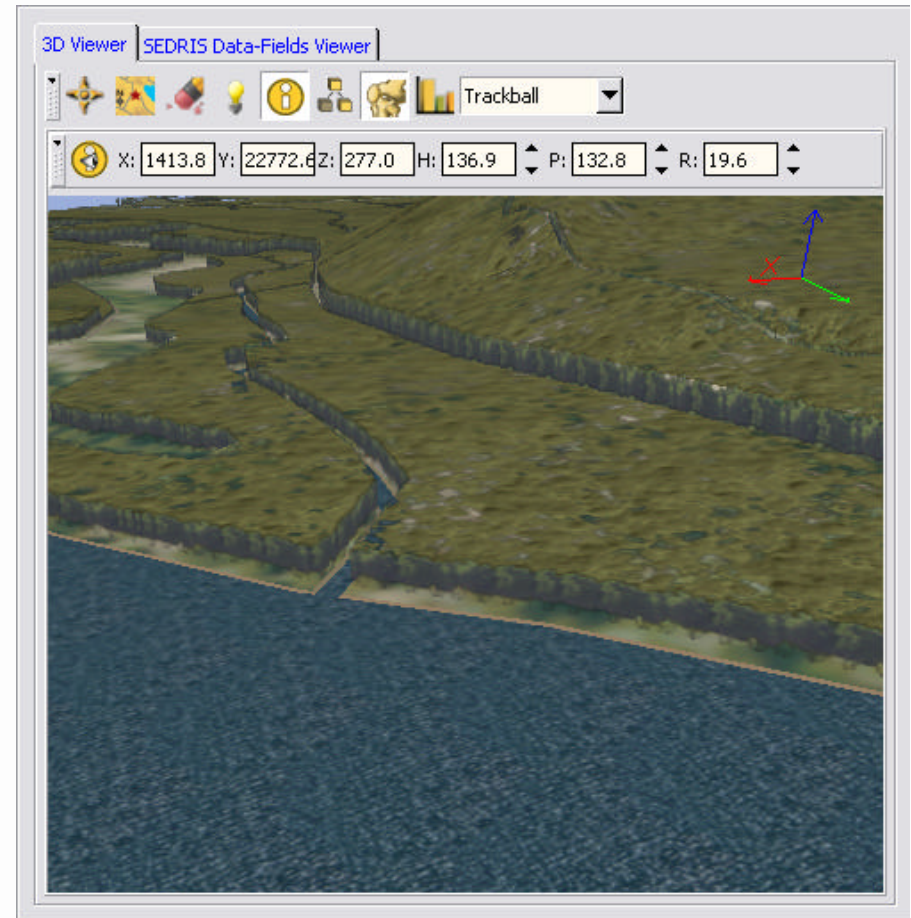


General Viewer Options: Grid Toggle

- When a database is loaded, SbS will create a grid based upon the tile dimensions.
- This grid can be toggled on and off.



- The 3D Viewer Plug-In displays the contents of the 3D scene-graph, which can be browsed in a tree view from the Database Manager.
- 3D Viewer offers the following features:
 - Mouse Modes
 - Repositioning
 - Lighting/Background Control
 - Switch Control
 - Rendering Statistics
 - Real-Time Mode
 - Camera Properties
 - Positional Information





3D Viewer: Mouse Modes

- The 3D Viewer has four different modes for mouse controls.
 - Trackball
 - Left Button : Pan
 - Right Button : Zoom
 - Middle (or Left and Right) Button : Rotate
 - Fly
 - Left Button : Accelerate
 - Right Button : Decelerate
 - Middle (or Left and Right) Button : Stop
 - Drive
 - Left Button : Accelerate
 - Right Button : Decelerate
 - Middle (or Left and Right) Button : Stop
 - Polygon Selection
 - Left Button : Select



3D Viewer: Mouse Modes (cont.)

- Polygon Selection
 - When a polygon is selected from the 3D Viewer, the corresponding geometry node in the scene-graph will be found in the Database Manager's 3D Scene Tree Hierarchy (see Database Manager section of this presentation).
 - If the polygon being selected comes from SEDRIS, then the SEDRIS <Polygon> will also be found in the SEDRIS Browser Window (see SEDRIS Transmittal Browser section of this presentation).

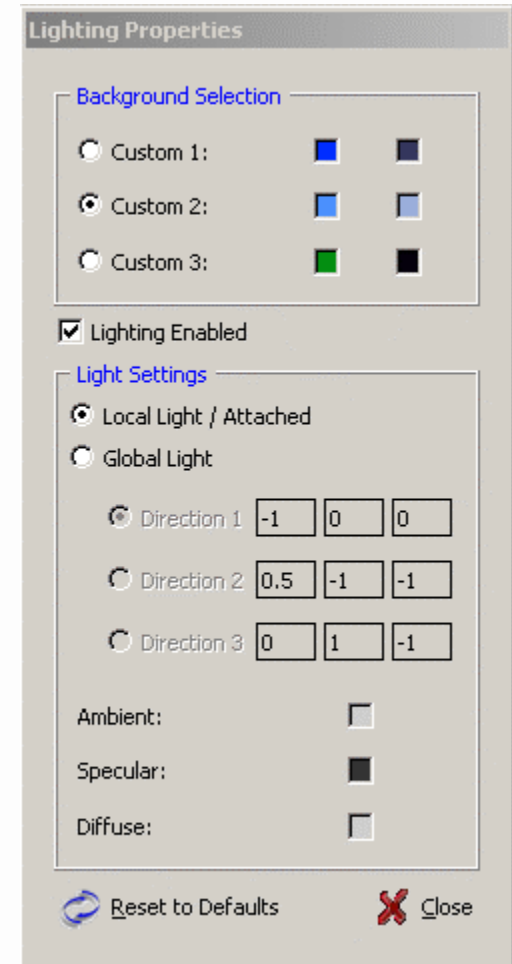
3D Viewer: Repositioning

- There are two controls provided by the 3D Viewer to automatically position the cameras.
 - Auto-Scale
 - Finds an optimal position to view the entire scene.
 - Center
 - Positions each view in the center of the scene in the XY plane. The camera's elevation is determined by the height of the terrain at that 2D location.



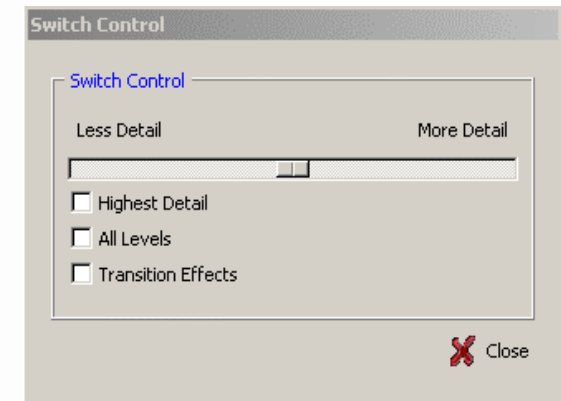
3D Viewer: Lighting/Background Control

- The lighting and background settings can be controlled by the user.
- The background is specified by two colors. The 3D Viewer will draw the background as a gradient from one color to the other.
- Lighting can be enabled and disabled.
- When enabled, one can specify whether the light should come from a set direction, or be attached to the camera.
- The color of the Ambient, Diffuse, and Specular lighting properties can also be adjusted.



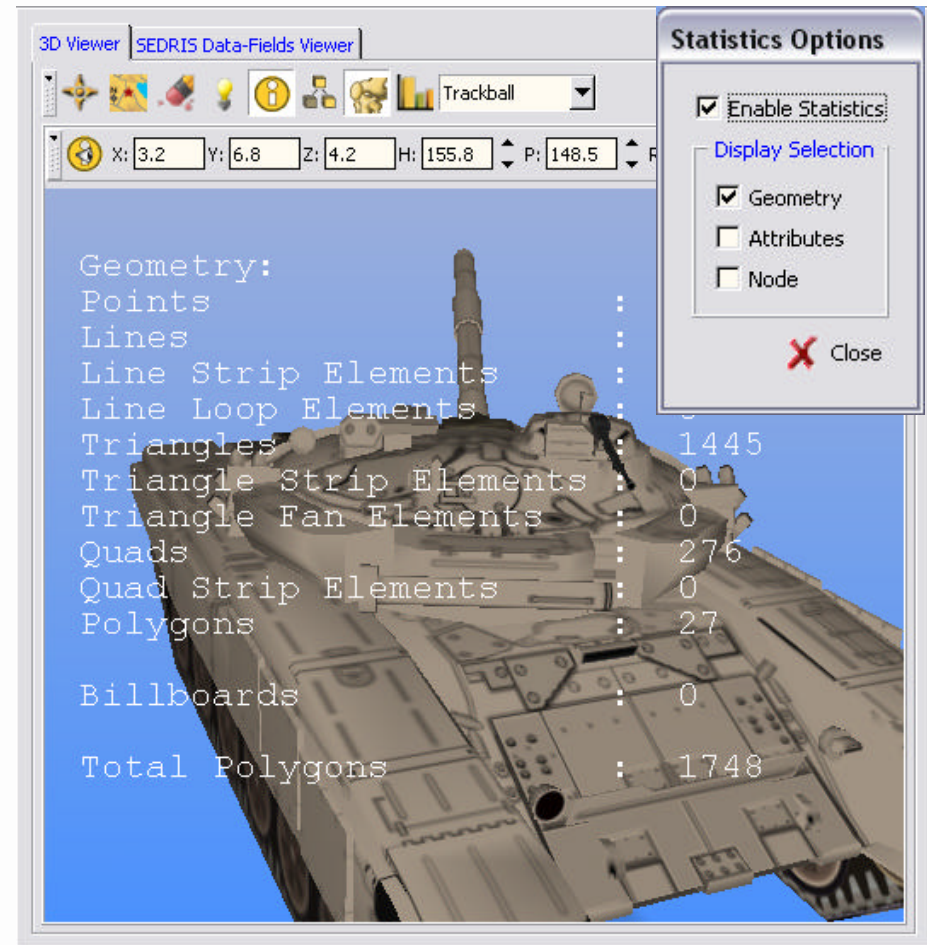
3D Viewer: Switch Control

- Switches, including LOD switches, can be controlled by the SbS user.
- A slide bar is used scale the LOD ranges.
- A check box is used to display only the highest LOD.
- Another check box is used to force all switch children to be displayed.
- Finally, a check box for transition effects is used to enable/disable blending from one LOD to another (LODs in the scene must be set up for this).
 - The transition blending is still in development. Currently it may render incorrectly.



3D Viewer: Rendering Statistics

- Statistics are provided about what the 3D Viewer is displaying.
- Statistical information includes:
 - Geometry
 - Gives a break down of the different primitive types in the scene.
 - Attributes
 - E.g., Textures, Materials
 - Node
 - E.g., Transforms, Switches
- These statistics indicate what is being rendered. Therefore, a single texture will be counted every time the engine is forced to apply it. Also, geometry that is outside the camera's frustum will not be counted.
- Use the Database Manager to determine scene statistics.



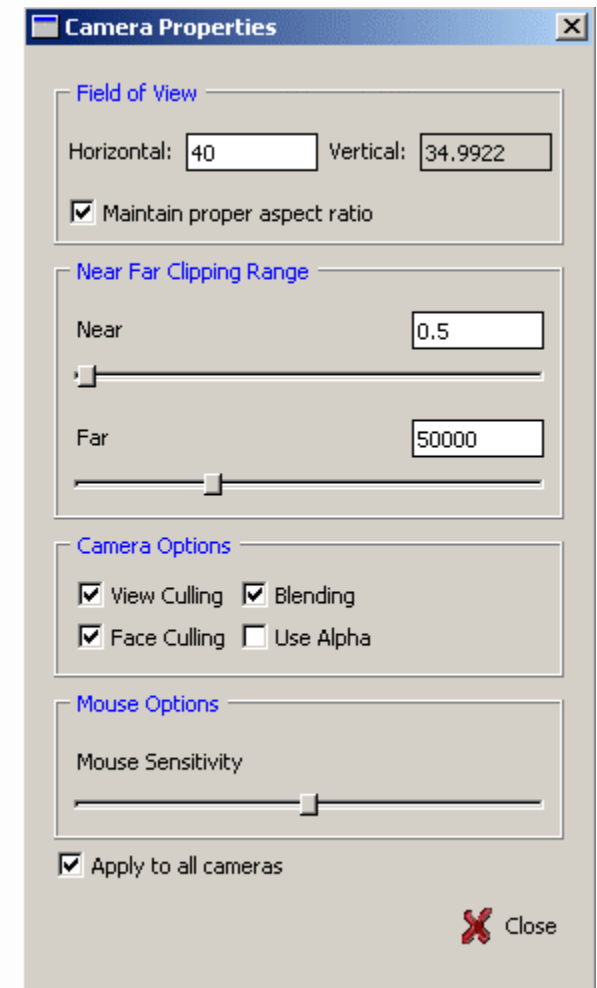
3D Viewer: Real-Time Mode

- The 3D Viewer only needs to render when the user has made a change, so it is not necessary to continuously redraw.
- However, if there are animated objects within the scene, then it is desirable to continuously redraw in order to view the animation.
- Therefore, the 3D Viewer user can toggle Real-Time Mode.



3D Viewer: Camera Properties

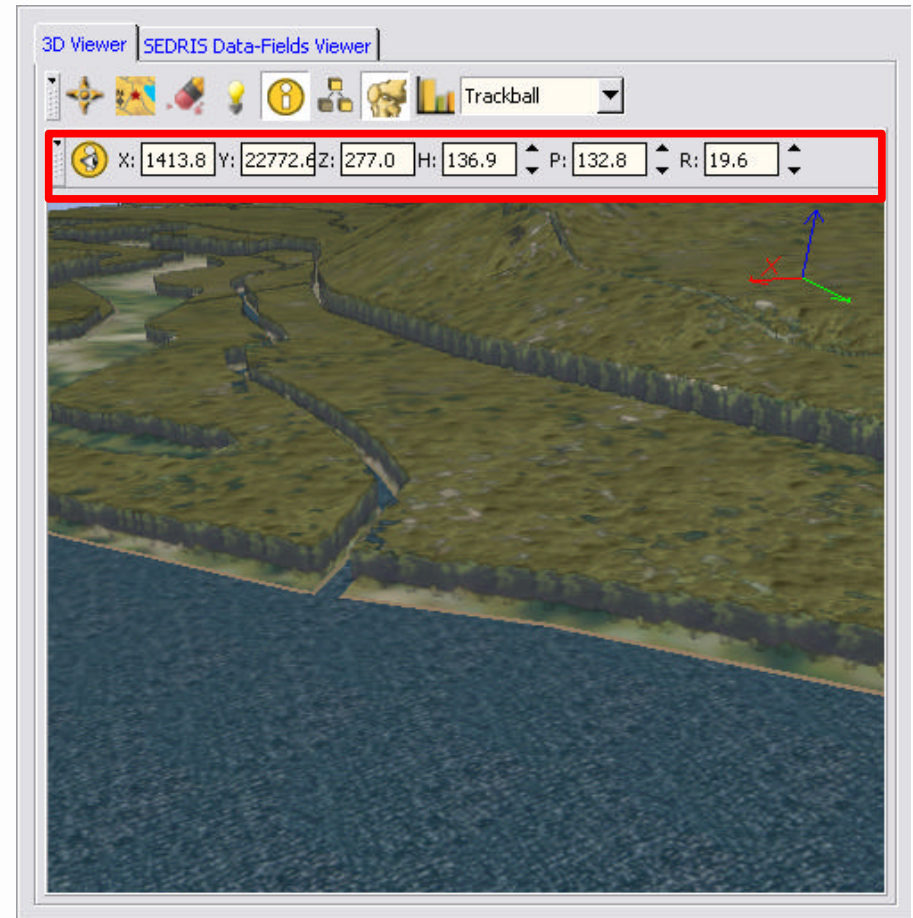
- There are many options associated with a camera.
- These options are organized in the Camera Properties Dialog.
- From this dialog the user can adjust:
 - Field of View Settings
 - Near and Far Clipping Range
 - Toggle Camera Frustum Culling
 - Toggle Face Culling
 - Toggle Blending
 - Uses the alpha value of RGBA colors.
 - Toggle Alpha
 - Clips alpha values that are less 0.1
 - Adjust Mouse Sensitivity for Motion Modes





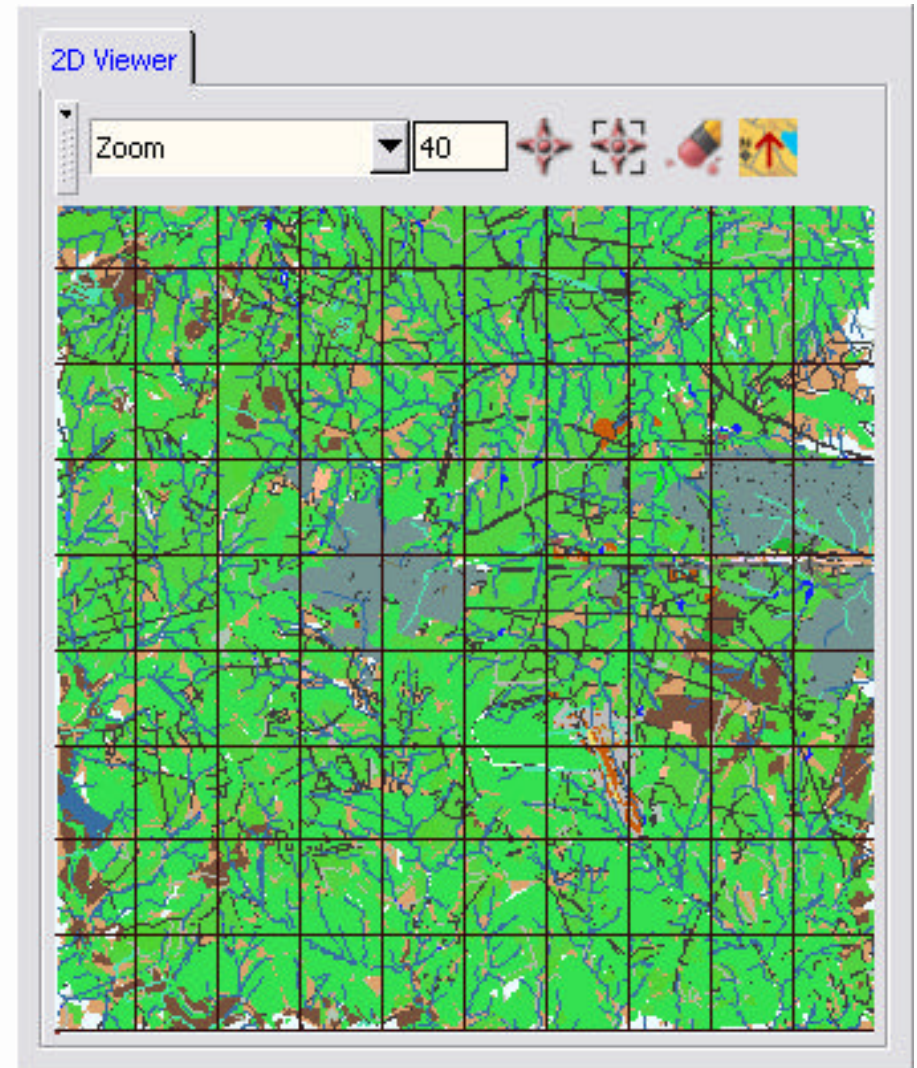
3D Viewer: Positional Information

- From the 3D Viewer, specific X, Y, Z and H, P, R values can be read and set from the view's eye-point.
- The H, P, R values can also be controlled from small arrow buttons placed to the right of the text field.



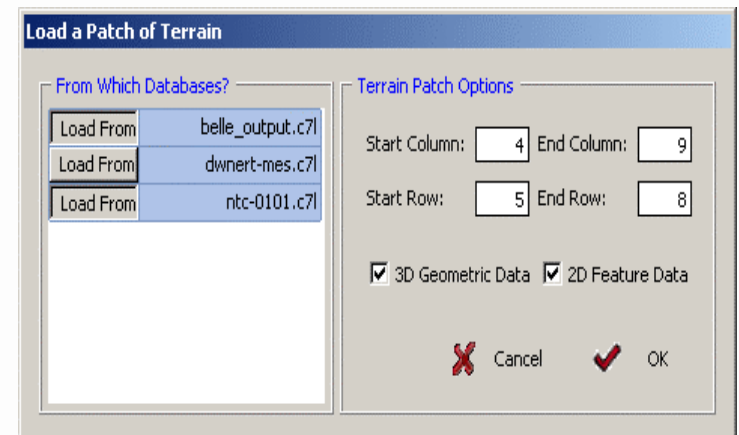
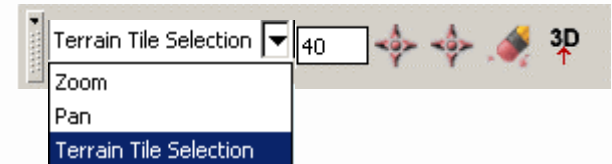
2D Viewer

- The 2D Viewer is used to display geometry and features in an orthographic, top-down view of the database.
- The 2D Viewer offers the following features:
 - Mouse Modes
 - Repositioning
 - Lock to 3D View



2D Viewer: Mouse Modes

- The 2D Viewer has three mouse modes.
 - Pan
 - Left mouse buttons pans about the view.
 - Zoom
 - Left mouse button is used to select an area to zoom into.
 - Tile Selection
 - Left mouse button is used to select a group of tiles to load.
 - After selecting an area, the “Load a Patch of Terrain Dialog” will pop-up.
- The right mouse button will always zoom out.
- The zoom out delta is determined in the toolbar text field. The value is in pixel units.





2D Viewer: Repositioning

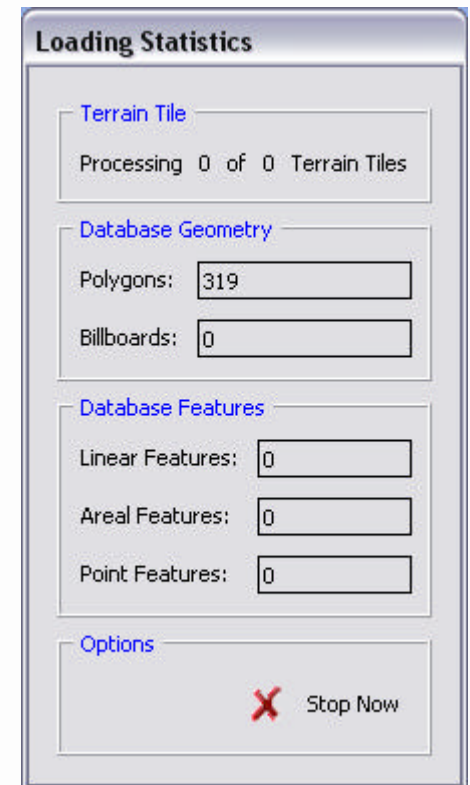
- There are two repositioning controls from the 2D Viewer.
 - Zoom to a view of the entire database.
 - Zoom to a view of the geometry and features in the 2D scene.



2D Viewer: Lock to 3D View

- The “Lock to 3D View” will cause the 2D Viewer to keep the position of the corresponding 3D View centered.

- AcuSoft has developed the following Importer Plug-Ins for SbS.
 - SEDRIS
 - CTDB
 - OpenFlight
 - Performer
 - VRML
- Whenever an Importer is accessing a database the “Loading Statistics Dialog” will appear, which gives information as to what is being loaded.
- From this dialog you can stop the operation early by clicking “Stop Now”.





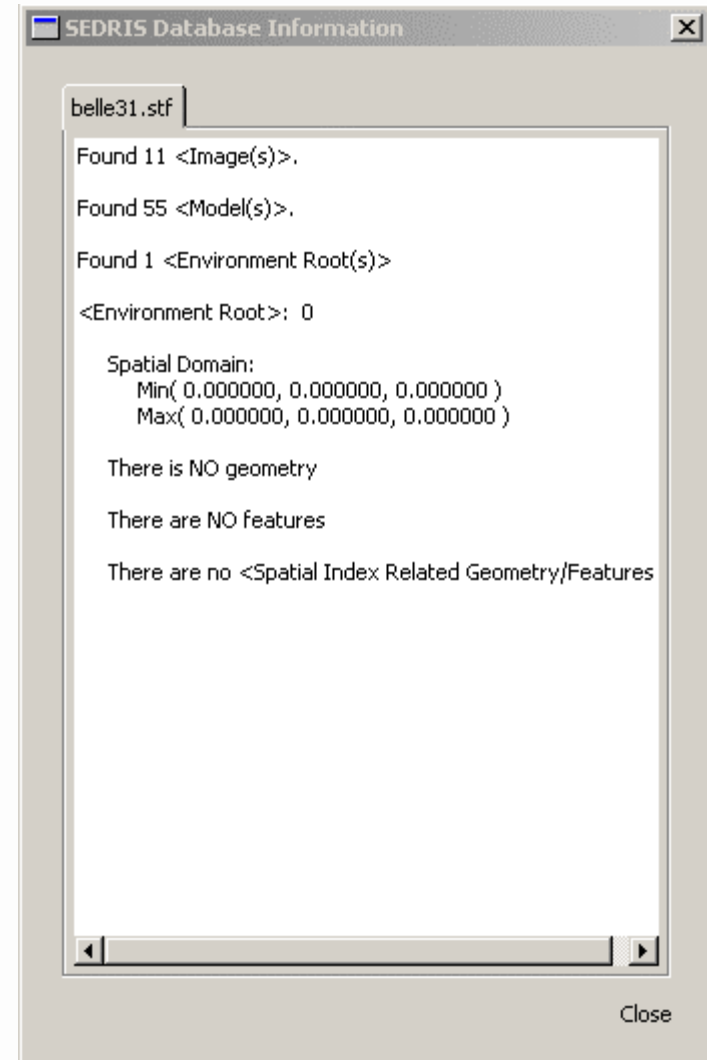
Importers: SEDRIS

- Through the SEDRIS Importer Plug-In, SbS can import SEDRIS Transmittal Format (STF) files.
- SEDRIS Topics:
 - Importing
 - Tile Organization
 - Loading Options
 - Polygon Flags
 - Model/Image Dialog
 - SEDRIS Transmittal Browser Plug-In
 - SEDRIS Data-Fields Viewer



Importers: SEDRIS

- Once an STF is loaded a SEDRIS Database Information Dialog will appear.
- This Dialog can be brought back up later through the menu item “Database Information”, under “Importer/SEDRIS Importer”.
- By checking the menu item “Simplified SEDRIS Loading”, this Dialog will not automatically be displayed when importing an STF.





Importers:

SEDRIS: Tile Organization

- When an STF is loaded, the SEDRIS Importer Plug-In will attempt to determine a spatial organization (if that option is enabled).
- It is specifically looking for <Spatial Index Related Geometry/Features> objects.
- Embedded <SIRG/F> are supported.
- If it fails to find such an organization, it will provide an option to consume the entire transmittal and break the geometry and features into a user defined tile organization.

Enter Tile Dimensions

Your SEDRIS Transmittal does not contain any terrain tile information, so SbS needs to divide it up. What values should I use for the tile dimensions (the default values create a 10x10 tile grid)?

Width: Height:

☒ OK

d:\databases\side-by-side testing\sedris\vpf\ftthood\t099d503-3.1....

The features are not organized in a <Spatial Index Related Features>. I need to organize your features to allow the features to be loaded on a tile basis.

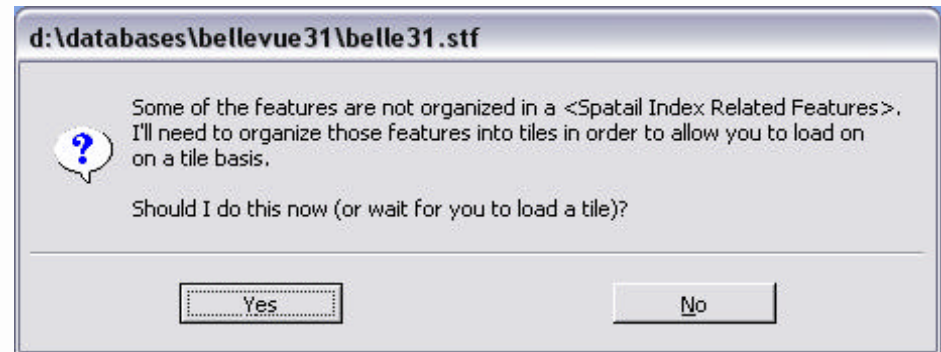
Should I do this now (or wait for you to load a tile)?



Importers:

SEDRIS: Tile Organization (cont.)

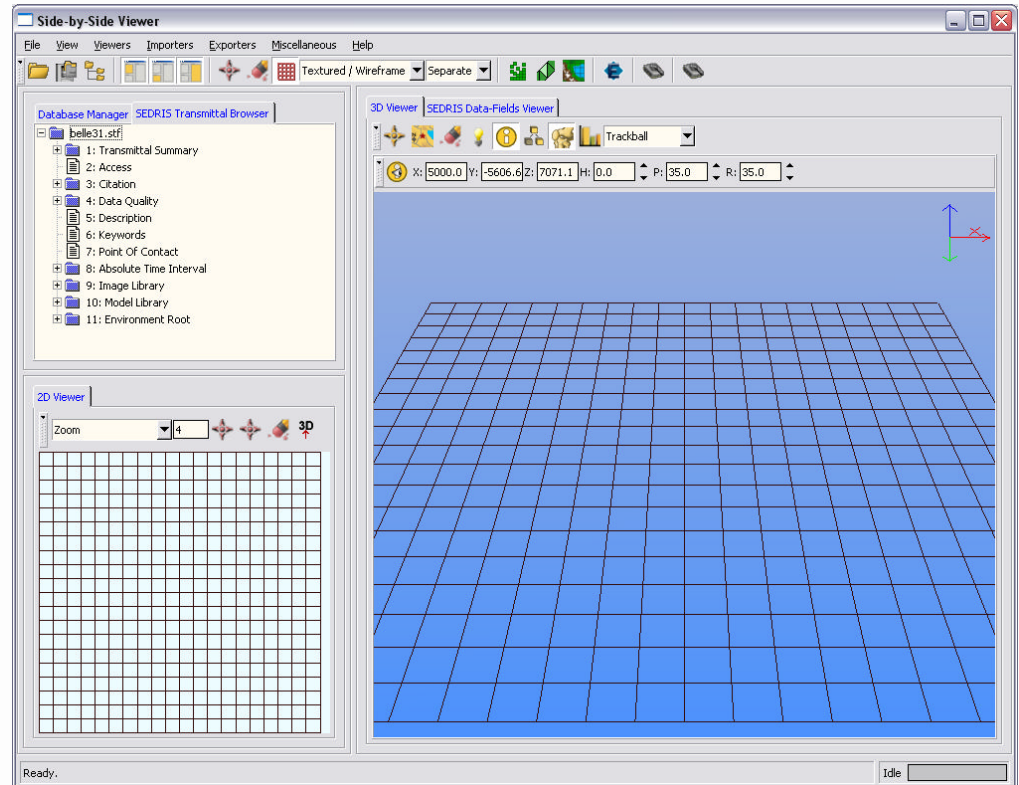
- If only the geometry or features are organized, and the other is not, then the SEDRIS Importer will request that the unorganized data be broken up in an identical fashion as the organized.
- It will also detect if some of the features are organized but others are not (likewise for geometry).



Importers:

SEDRIS: Tile Organization (cont.)

- This screen-shot shows the state of SbS right after the Bellevue STF was loaded.
- It determined that there was a 20x20 tile grid.
- That grid is show in both the 3D and 2D view.
- See the previous plug-in sections for how to work with the database at this point.

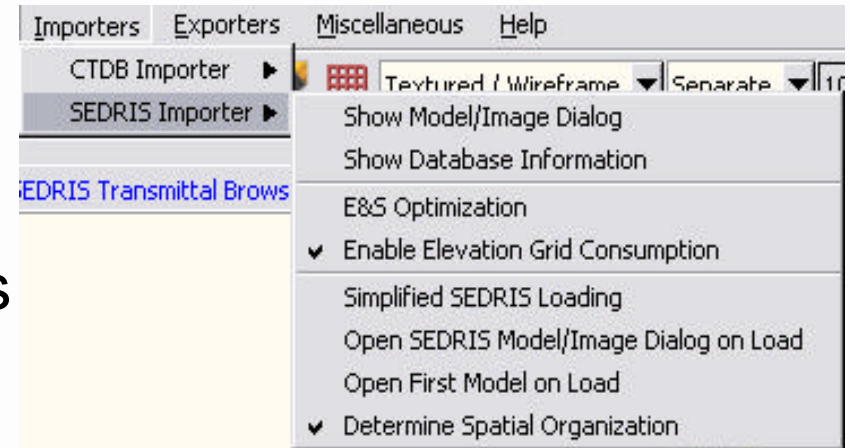




Importers:

SEDRIS: Tile Organization (cont.)

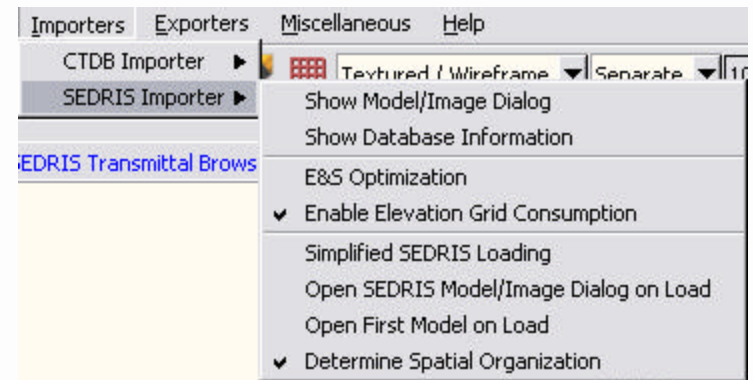
- For large databases, it may be time consuming to allow SbS to determine the tile organization.
- For the CCTT STFs the process may take as long as 5 minutes.
- If loading on a tile basis is not necessary, one can un-check “Determine Spatial Organization”
- By doing this, the SEDRIS Importer will not attempt to determine an organization.
- All other SEDRIS Importer features will behave normally.





Importers: SEDRIS: Loading Options

- The SEDRIS Importer provides the following options:
 - Information Options
 - Show Model/Image Dialog
 - Show Database Information
 - Dynamic Loading Options (can be changed after STF is imported)
 - E&S Optimizations
 - Causes the SEDRIS Importer to automatically clean up delayering issues associated with the E&S produced STFs.
 - Enable Elevation Grid Consumption

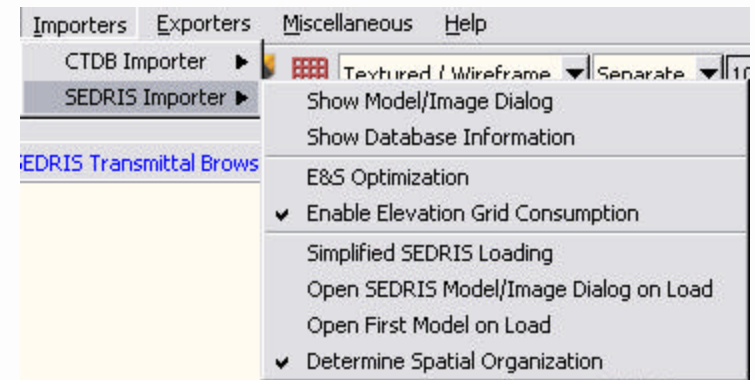




Importers:

SEDRIS: Loading Options (cont.)

- The SEDRIS Importer provides the following options (cont.):
 - Pre-Import Options
 - Simplified SEDRIS Loading
 - Open SEDRIS Model/Image Dialog on Load
 - Bring up the Model/Image Dialog as soon as an STF is imported.
 - Open First Model on Load
 - Add the first model to the scene as soon as the STF is imported.
 - Determine Spatial Organization



Importers:

SEDRIS: Polygon Flags

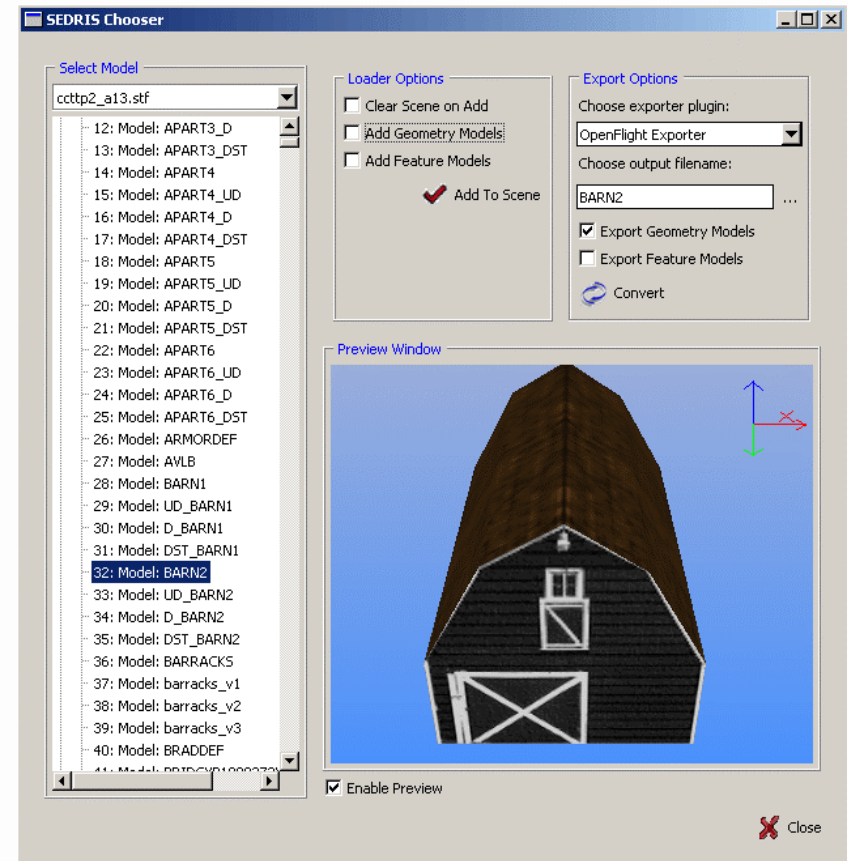
- In SEDRIS <Polygons> have an attribute that flags the polygon of being a certain type.
- SbS allows users to select which <Polygons> should be displayed based upon its flags.
- By default all Polygon Flags are displayed.



Importers:

SEDRIS: Model/Image Dialog

- The Model/Image Dialog provides a simple interface for browsing and viewing models and images.
- If you decide you want to look at a model in one of the main viewers, click “Add to Scene”.
- It is also possible to export the model/image directly from this dialog (see Exporter Section).

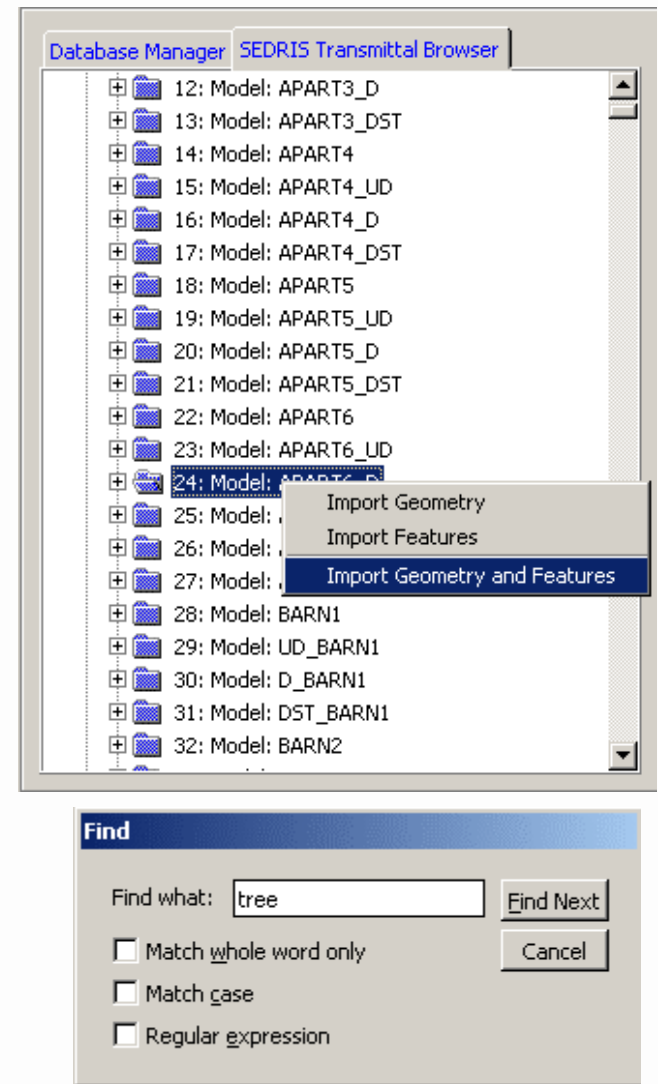




Importers:

SEDRIS: Transmittal Browser

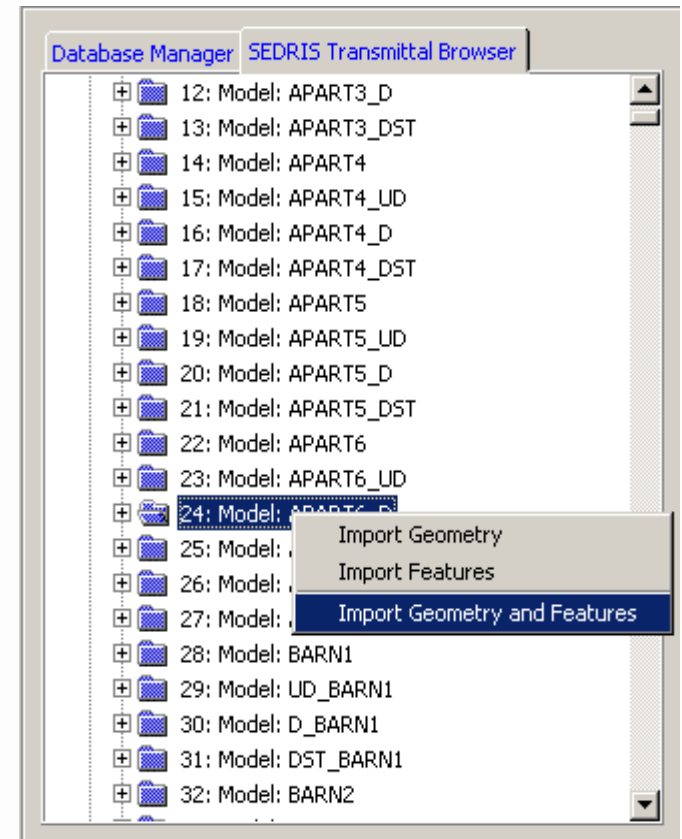
- The SEDRIS Browser is a separate Plug-In, but it works hand-in-hand with the SEDRIS Importer Plug-In.
- The SEDRIS Browser provides a directory-explorer style hierarchical view of an STF.
- The SEDRIS Transmittal Browser window is searchable. This is useful when attempting to find a certain model or image.
- When selecting polygons from the 3D View (see slide 21), the SEDRIS Transmittal Browser will find the corresponding SEDRIS <Polygon> in the tree.



Importers:

SEDRIS: Transmittal Browser

- On any SEDRIS object, one can right click to get a pop-up menu (shown to the right).
- From this pop-up menu, the user can choose to load all of the geometry and/or features from the selected SEDRIS object down.
- The geometry will be loaded into the 3D scene, while features are stored in the 2D scene.
- Multiple Objects can be selected and loaded simultaneously.

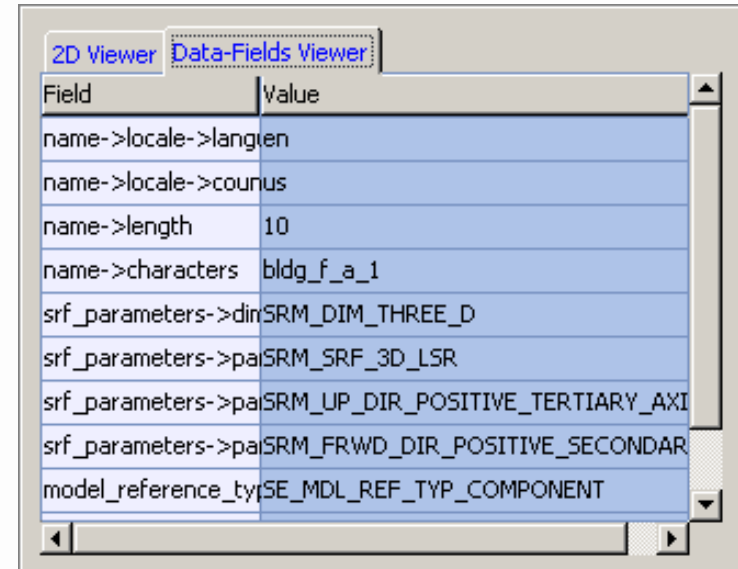




Importers:

SEDRIS: Data-Fields Viewer

- The SEDRIS Data-Fields Viewer is a separate Plug-In that is feed information from the SEDRIS Browser Plug-in.
- The SEDRIS Data-Fields Viewer displays all the attributes of the SEDRIS object that is currently selected in the SEDRIS Browser.



The screenshot shows a window titled "2D Viewer" and "Data-Fields Viewer". It contains a table with two columns: "Field" and "Value". The table lists various attributes of a SEDRIS object, including name-related fields, srf_parameters, and model_reference_type.

Field	Value
name->locale->lang	en
name->locale->country	
name->length	10
name->characters	bldg_f_a_1
srf_parameters->dir	SRM_DIM_THREE_D
srf_parameters->pa	SRM_SRF_3D_LSR
srf_parameters->pa	SRM_UP_DIR_POSITIVE_TERTIARY_AXI
srf_parameters->pa	SRM_FRWD_DIR_POSITIVE_SECONDAR
model_reference_ty	SE_MDL_REF_TYP_COMPONENT



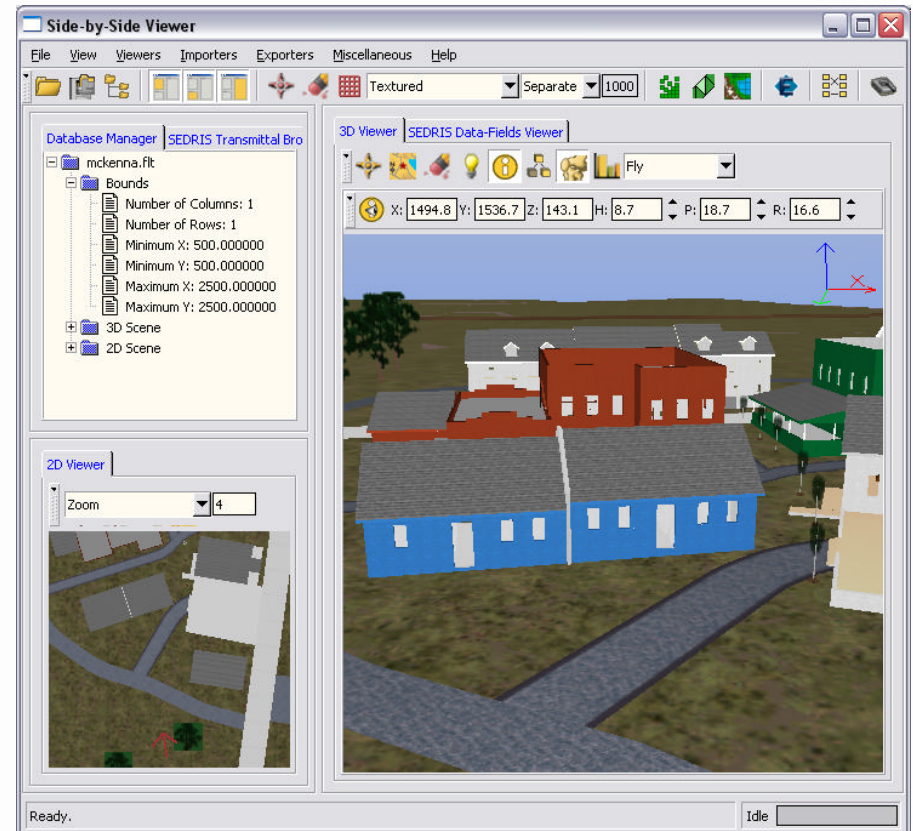
Importers: SEDRIS: Feature Mappings

- The colors used to render the feature data, as well as the color of the geometry when in the “Classification Colors” Rendering Mode (see Database Manager section), are determined by a Feature Mappings File.
- This file is stored in “\SidebySide\data” and is called “*EDCS_mapping.txt*.”
- This file maps every ECC (EDCS Classification Code) to an RGBA color.
- In the future a GUI will be provided to edit this file directly from SbS.

Importers:

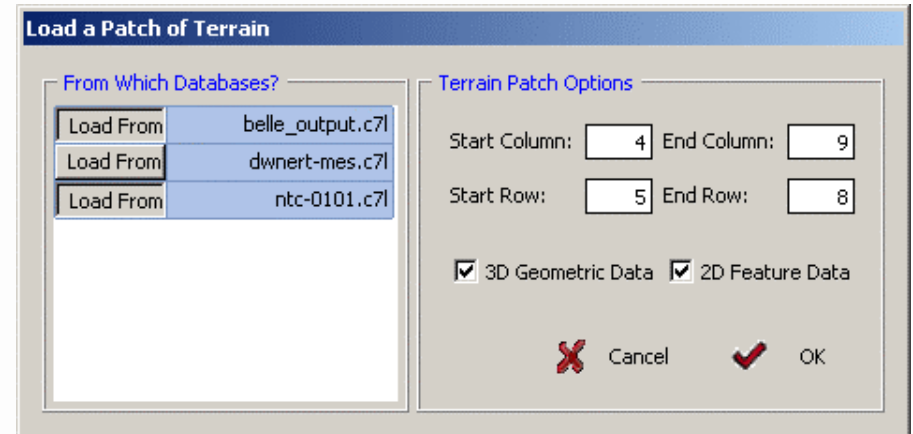
OpenFlight / Performer / VRML

- AcuSoft provides Importer Plug-Ins for the formats:
 - OpenFlight
 - Performer
 - VRML
- For these importers, the 3D and 2D scene share the same scene hierarchy.
- This means that the 3D Viewer and 2D Viewer will be rendering the same scene.



Importers: CTDB

- The CTDB Importer can import the feature data into the 2D Scene and the geometric data into the 3D Scene.
- Working with a CTDB in SbS is similar to working with an STF (with respect to tile loading).
- The only way to view the CTDB data is to load tiles, via the “Load a Patch of Terrain Dialog”.

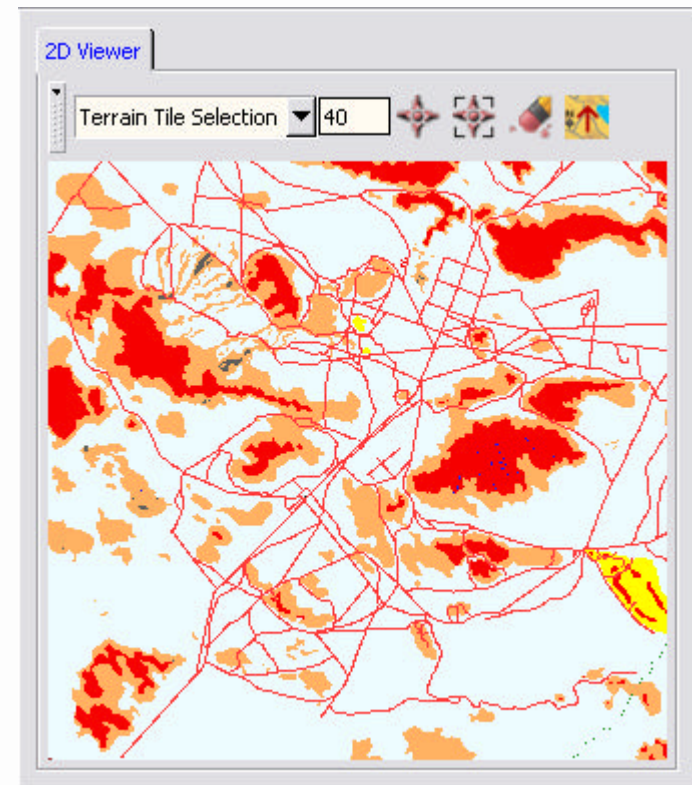




Importers:

CTDB: Feature Viewing

- When the CTDB Feature Data is added to the 2D Scene, the 2D Viewer will display it.



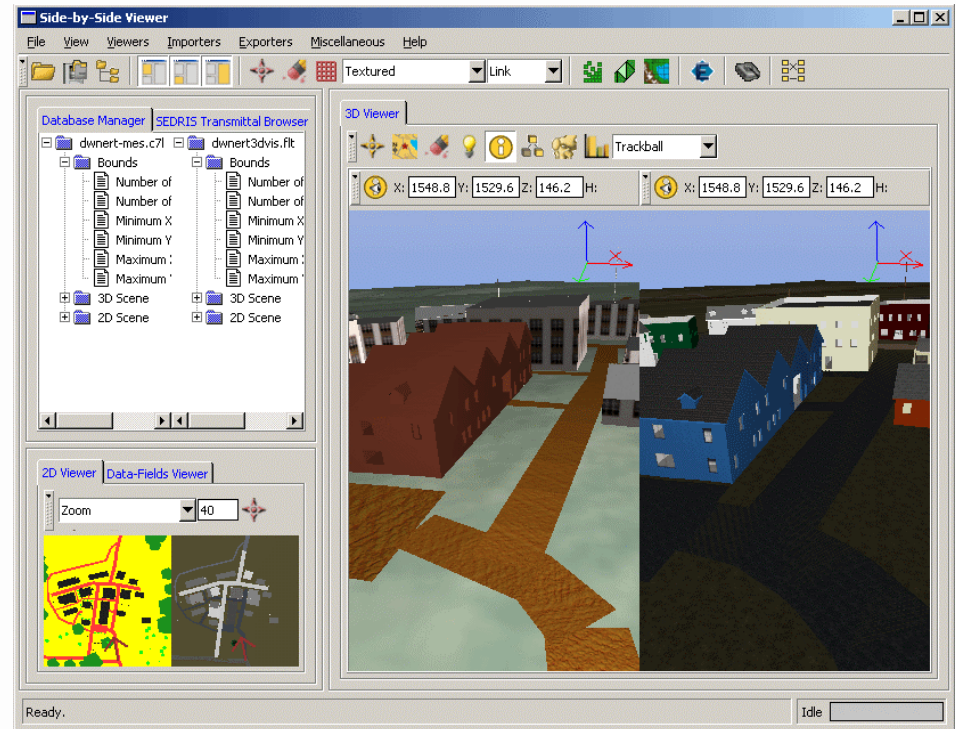


Importers: CTDB: Geometric Viewing

- The CTDB Importer will add geometric data to the 3D Scene.
- The CTDB Importer also performs the following data intensification services:
 - Trees are converted into a billboard.
 - Tree-Lines are converted into vertical polygons.
 - Volumes Models are converted into a complete structure, complete with walls and ceiling.
 - Laid Linears (roads and rivers) are converted into flat polygons on top of the terrain.
 - Elevation and Soil Grid are converted into polygons.
 - Texture coordinates are calculated for all polygons, and default textures are applied.

Importers: CTDB: Geometric Viewing

- This screen-shot shows SbS viewing the OpenFlight version of McKenna on the right and the CTDB on the left.
- In the 3D View you can see that it has built a complete 3D scene.
- The red building is an MES (Multi-Elevation Structure).
- The other buildings are simple Volume Models.



Importers:

CTDB: Feature Mapping

- The color used to render the features and the textures applied to the geometry are determined through a Mapping File (similar to the SEDRIS Importer's Mapping File).
- This file is stored in "*\SidebySide\data*" and is called "*CTDB_mapping.txt*."
- There is also a GUI as part of the CTDB Importer Plug-In to edit this file. The dialog is called "Feature Mapper".

Feature Mapper

Current working file: E:\Work\SbViewer\Data\CTDBMapping.txt

Soil Type	Texture File	Color R	Color G	Color B	Color A	Sensor Index	Rendering P	Comment
// SIMNET Ty								
0	rockysoil.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// Default
1	road.lar	0.892150	0.192150	0.192150	1.000000	-1	0.800000	// Road
2	soil.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// RCI_25
3	sand.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// RCI_05
4	lake.lar	0.098030	0.215680	0.650980	1.000000	-1	0.000000	// Deep W
5	lake.lar	0.196070	0.407840	0.949010	1.000000	-1	0.000000	// Shallow
6	rockysoil.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// Default
7	rockysoil.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// Default
8	rockysoil.lar	0.047050	0.556860	0.117640	1.000000	-1	0.000000	// Default
9	lake.lar	0.117640	0.160780	0.443130	1.000000	-1	0.000000	// Bathym
10	lake.lar	0.117640	0.160780	0.443130	1.000000	-1	0.000000	// Bathym
11	lake.lar	0.098030	0.215680	0.650980	1.000000	-1	0.000000	// Deep W
12	lake.lar	0.098030	0.215680	0.650980	1.000000	-1	0.000000	// Deep W

Close Save

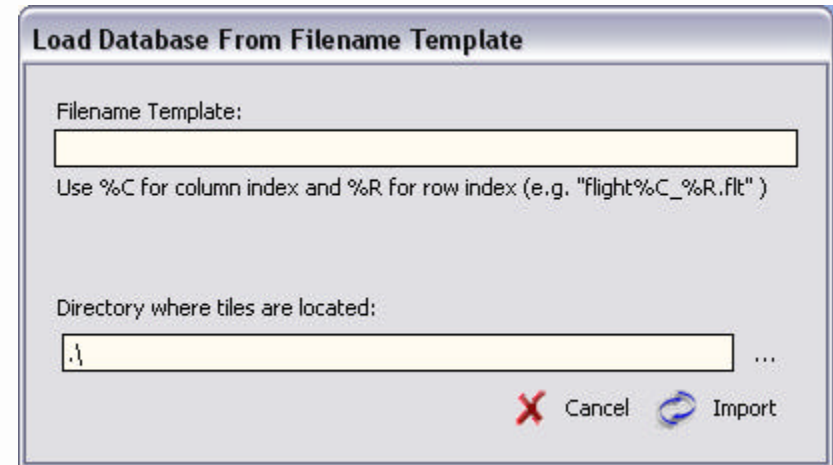


Filename Template Loading

- It is common for data producers to build an OpenFlight database that is broken up into tiles.
- Where each tile is a separate OpenFlight file.
- Often there will be a Master OpenFlight that externally references each of the terrain tiles.
- The problem with loading that Master File is that it may be very time consuming, and rendering performance may suffer.

Filename Template Loading (cont.)

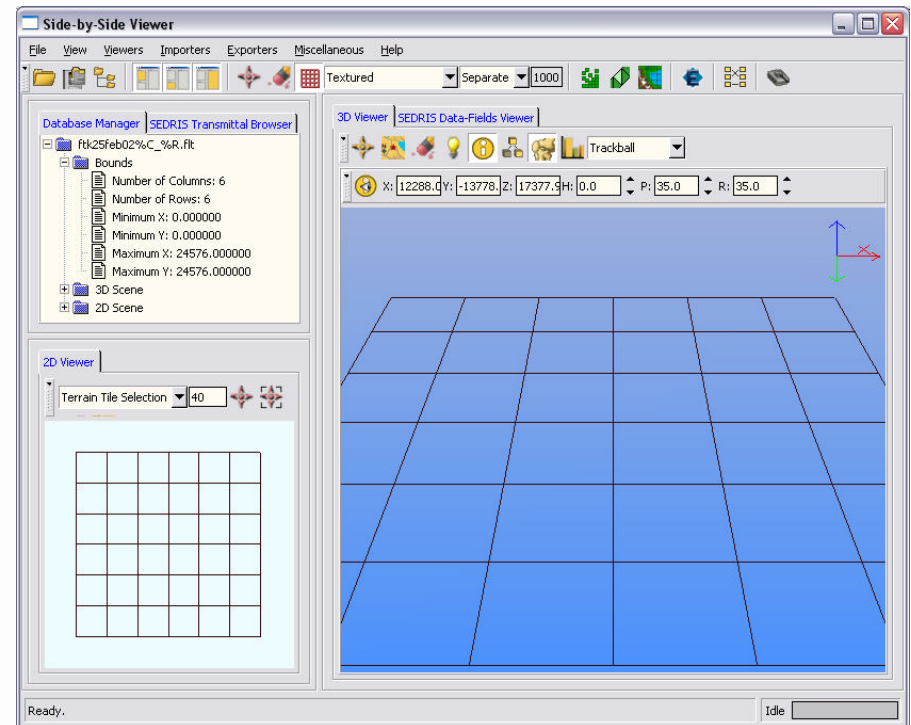
- To deal with this issue, SbS comes equipped with the feature: Filename Template Loading.
- This feature allows you to specify the naming convention of the individual files.
- “%C” is used to indicate where the column index should be in the filename, while “%R” is for the row.
 - E.g., “flight%C-%R.flt”





Filename Template Loading (cont.)

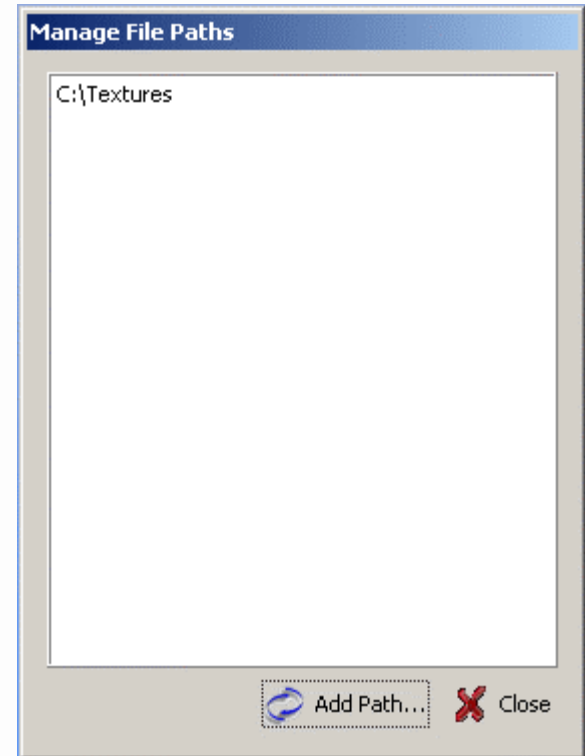
- SbS will find all of the files that match the format.
- The user can then select which tile (which corresponds to a separate file) to load in the same fashion as tiles are loaded from a CTDB or STF.
- Filename Template Loading can be performed with the following formats:
 - OpenFlight
 - Performer
 - VRML





Adding/Removing File Paths

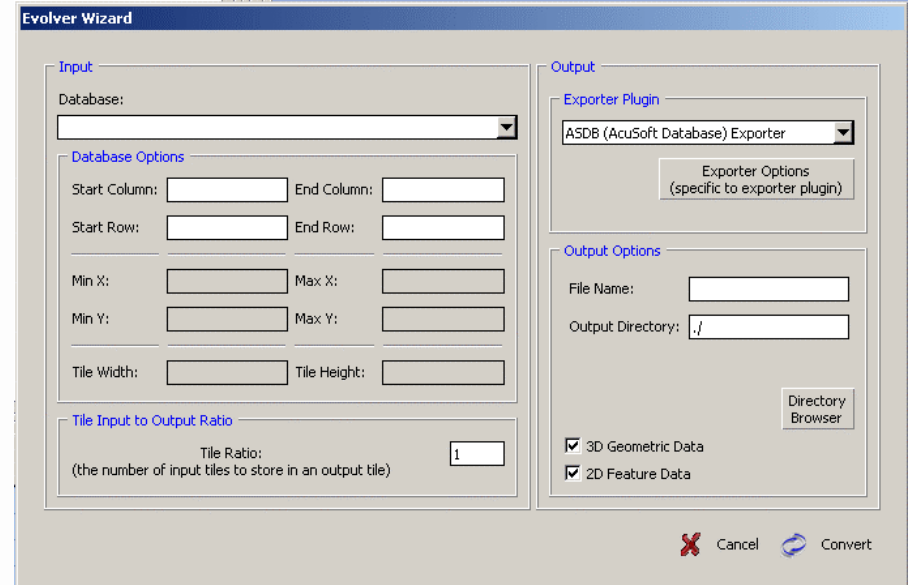
- Using the “Manage File Paths Dialog” one can add/remove paths for proper texture and model loading.
- If an OpenFlight file references an RGB image that is not in this path, then that texture will be missing.



Correlation Report Generator

- AcuSoft is developing a new Plug-In that will automatically find correlation issues between databases.
- The output of this Plug-In is an HTML-based report that uses statistical data and images to present the correlation findings.
- This Plug-In compares the color and depth buffers on a tile-basis.

- Evolver is a Plug-In that is used to convert a database from one format to another.
- From the “Evolver Wizard Dialog” the user can select:
 - Which database to convert
 - The column and row bounds
 - Tile Input to Output Ratio
 - Used to combine multiple source tiles into a single destination tile.
 - Which Exporter Plug-In to use (see Exporter Section)
 - The destination filename.
 - Whether to convert the 3D and/or 2D tiles.



The Evolver Wizard dialog box is divided into two main sections: Input and Output.

Input Section:

- Database:** A dropdown menu for selecting the source database.
- Database Options:** A group box containing:
 - Start Column: [text box] End Column: [text box]
 - Start Row: [text box] End Row: [text box]
 - Min X: [text box] Max X: [text box]
 - Min Y: [text box] Max Y: [text box]
 - Tile Width: [text box] Tile Height: [text box]
- Tile Input to Output Ratio:** A group box containing:
 - Tile Ratio: [text box with value 1]
 - (the number of input tiles to store in an output tile)

Output Section:

- Exporter Plugin:** A dropdown menu showing "ASDB (AcuSoft Database) Exporter". Below it is a button labeled "Exporter Options (specific to exporter plugin)".
- Output Options:** A group box containing:
 - File Name: [text box]
 - Output Directory: [text box with value .]
 - Directory Browser button
 - 3D Geometric Data: ☒
 - 2D Feature Data: ☒

At the bottom right are buttons for Cancel (with a red X icon) and Convert (with a circular arrow icon).

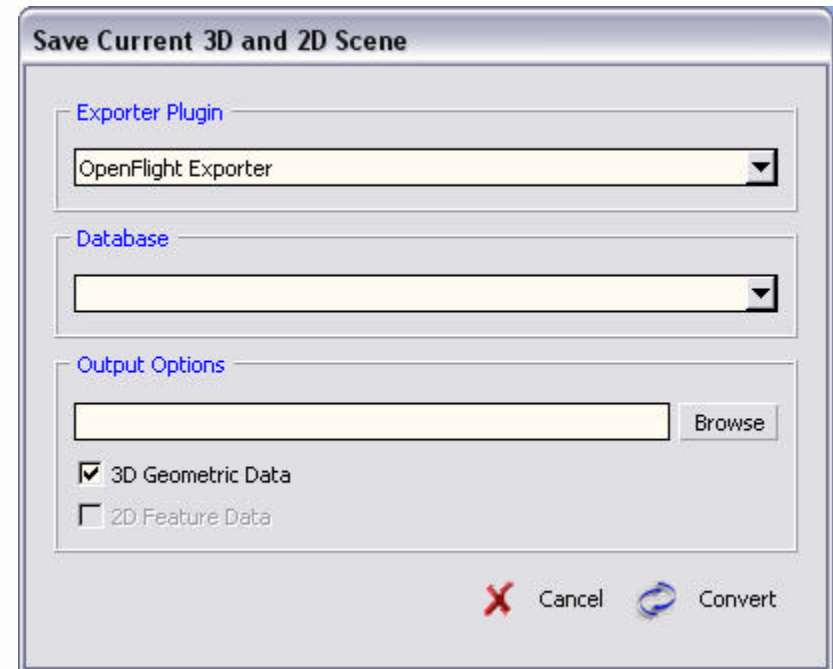


Exporters

-
- Exporters are a type of Plug-In used to write out an imported database.
 - AcuSoft has developed the following Exporter Plug-Ins.
 - OpenFlight
 - AcuScene (ASDB)
 - AcuScene is AcuSoft's PC-based Image Generator

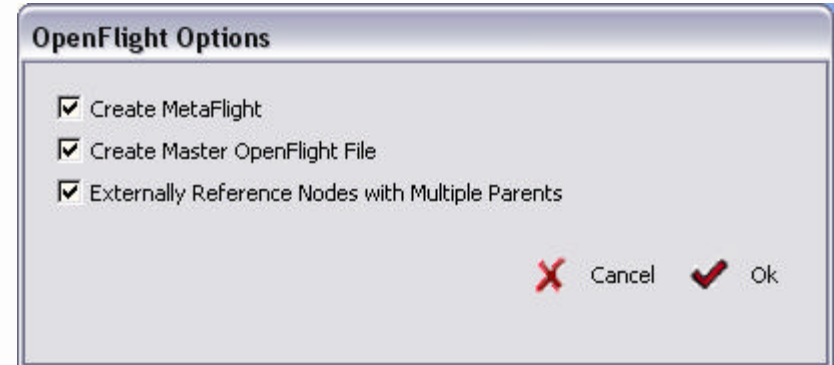
Exporters (cont.)

- There are two ways for an Exporter to be used.
 - From Evolver (see Evolver section)
 - From “Save Current 3D and 2D Scene Dialog”
 - This dialog allows the user to save out the current 3D and/or 2D scene using the specified Exporter Plug-In.



Exporters: OpenFlight

- The OpenFlight Exporter must be registered prior to usage.
- The options for the OpenFlight Exporter include:
 - Generate a MetaFlight File
 - A MetaFlight File will only be created if exporting is done from Evolver.
 - Create Master OpenFlight File
 - If Evolver is used to export, then this option can be used to build an OpenFlight file that externally references the individual tile files.
 - Externally Reference Nodes with Multiple Parents.





Plug-In SDK

- The SDK AcuSoft developed to create Plug-Ins, may be released if there is significant interest in others developing for SbS.



Where To Go From Here

- Download the latest version of Side-by-Side at www.acusoft.com.
- Questions should be directed to the forum at www.acusoft.com. For private enquires email sidebyside@acusoft.com
- Visit the AcuSoft exhibit for more information on Side-by-Side and other AcuSoft products.