Technical Insights

Data Layers in LP360

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(Applies to both LP360 for ArcGIS® and LP360 for Windows®)

LP360 (both LP360 for ArcGIS® and LP360 for Windows®) manages point cloud data at the file level and the Table of Contents (TOC) Layer level. You have probably noticed (if not used) the Active Layer selection tool in LP360. The Active Layer selection tool (for LP360 for ArcGIS®) is shown in Figure 1.

Figure 1: Active LAS Layer Selection

All commands in LP360 act on the currently selected active layer. For example, if you set the display mode to Triangulated Irregular Network (TIN), only the current Active Layer will change to the new mode. All other LAS Layers will remain in their currently selected mode. Similarly, if you manually reclassify point data (the Standard level license is required for reclassification), only points contained in files that are members of the Active Layer will be modified (assuming you have opened the file for Read/Write and not just Read).

Creating Layers:

LAS layers are created in LP360 when you import files. The creation happens in different ways, depending on how you read LAS data into LP360. In LP360 for ArcGIS®, reading LAS data in using the ArcGIS® **Add Data** tool always creates a separate layer for each LAS file, even if you open all files with one **Add Data** operation. For this reason, you generally should not use this ArcGIS® tool for reading in LAS data. Instead, the **Add LIDAR Data Layer** tool of LP360 should be used (see Figure 2). This tool will add all of the files selected from the file browser dialog to a single, newly created LAS Layer. If you run the tool a second time, a new layer will be created with all selected files of this subsequent run added to the new layer.

Figure 2: LP360 Add LIDAR Data Layer tool

You can rename the layers once they have been created. This is accomplished in ArcGIS® by double left-clicking the layer in the TOC and renaming it under the General tab. In LP360 for Windows®, single left-click the layer entry in the TOC and then single left-click a second time. This will enter an Edit in Place mode that allows you to change the name. You will need to rename layers if you create more than one since LP360 always uses the name "LAS Layer" when creating new layers. If you do not maintain unique names, you will have difficulty in figuring out which is the Active Layer.

Adding to Layers:

It is often the case that you want to add new LAS files to an existing layer in the TOC rather than creating a new layer. This can be achieved by the following steps:

1. Switch the TOC to the "LAS Files" view
2. Right Click the Layer (not files in the layer) to which you wish to add files (see Figure 3)
3. Select **Add File(s)…** or **Add Files from Folder…** (note that the Add Files from Folder option provides you with a very powerful recursive search tool)
4. Browse to the desired files and select

Load Selected Files
Unload Selected Files

Open Selected Files for Read-only
Open Selected Files for Read/Write

Switch Selection
Clear Selection

File Information...

Pyramid Selected Files...

Pan to Selected Files
Zoom to Selected Files

Add File(s)...
Add Files from Folder...
Remove Selected Files
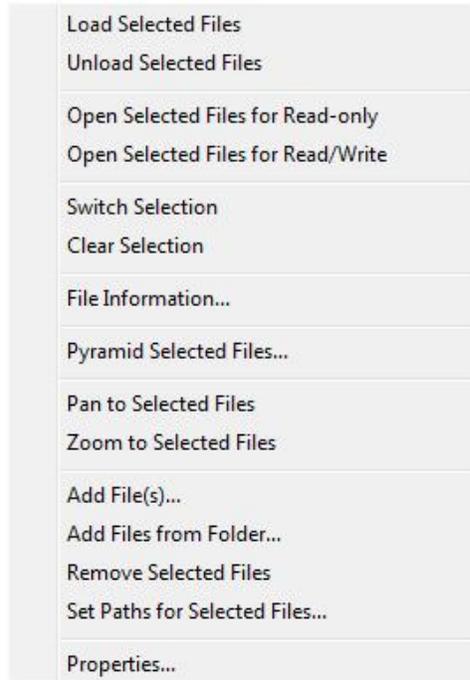Set Paths for Selected Files...

Properties...

Figure 3: Files Management Dialog in LP360

The files that you select will be added to the layer that was selected when you right clicked for the command. Note that, in general, LAS files on the same layer must be of the same Point Data Record Format (an upcoming release of LP360 will automatically enforce this rule for you).

Using LAS Layers

Using LAS Layers is simple once you appreciate the concept of the **Active Layer**. Basically all operations that you perform in LP360 function against the Active Layer (see Figure 1) only. For example, if you have two LAS layers with coincident coverage (as you might have in a temporal analysis) and create a profile view, only the data from the current active layer will be displayed in the profile window. When you toggle the Active Layer to a different LAS Layer, the profile view will instantly swap to the new layer.

Note that whatever display settings are established for a particular layer remained fixed with that layer if you make it inactive (a layer is 'inactive' if it is not the current Active Layer). This feature allows you to have different display modes present simultaneously. For example, you can set one layer to display as a TIN and another to display by points. In the temporal case noted above, you can have the two separate display modes superimposed.