Installation, Licensing and Updates

LP360 Latest Experimental Release

LP360

BSAU | AWG

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Revision 1.0

We have recently released a new experimental (EXP) version of LP360 (2012.2.17.0). EXP versions allow us to release in-progress features to the subset of customers who like to experiment with software. If you have an active maintenance contract, you can install this release from the "Check for Updates" function in LP360 (they are web downloads). If you are in a critical situation (for example, production) where you cannot afford errors or the time it might take to roll back a version, don't load the EXP versions! We try to do an EXP release about every 6 weeks or so and a "stable" release on an approximate 6 month cycle. Features in the EXP release will typically change or even be retracted in the stable release. Be advised that we may have introduced defects into the EXP release as an unanticipated side effect so beware!

There are several interesting capabilities in EXP 2012.2.17.0. These include:

- Rigorous TIN (actually a bug fix)
- View by physical file
- Separate display paths for TIN and Points (incredibly useful!)
- Difference Grids (very experimental and raw!!)
- Stuff on the Planar Extractor you should not use!

You can see from the above list that the EXP features range from very useful to stuff that is intended for a very specific experiment and should probably not be used by all.

Rigorous TIN:

We had an error report from a customer that involved contour mismatches when producing tiles output derivative products. This was mysterious since we very frequently use this feature. After much investigation, we discovered that it was related to the fact that this customer's LAS data was on a perfect grid (obviously derived from DEM grid). It turns out that our very fast Triangulated Irregular Network (TIN) generation code randomly decides on the way to triangulate a rectangle (both upper left to lower right or lower left to upper right meet the exact same Delaunay criteria - see Figure 1).

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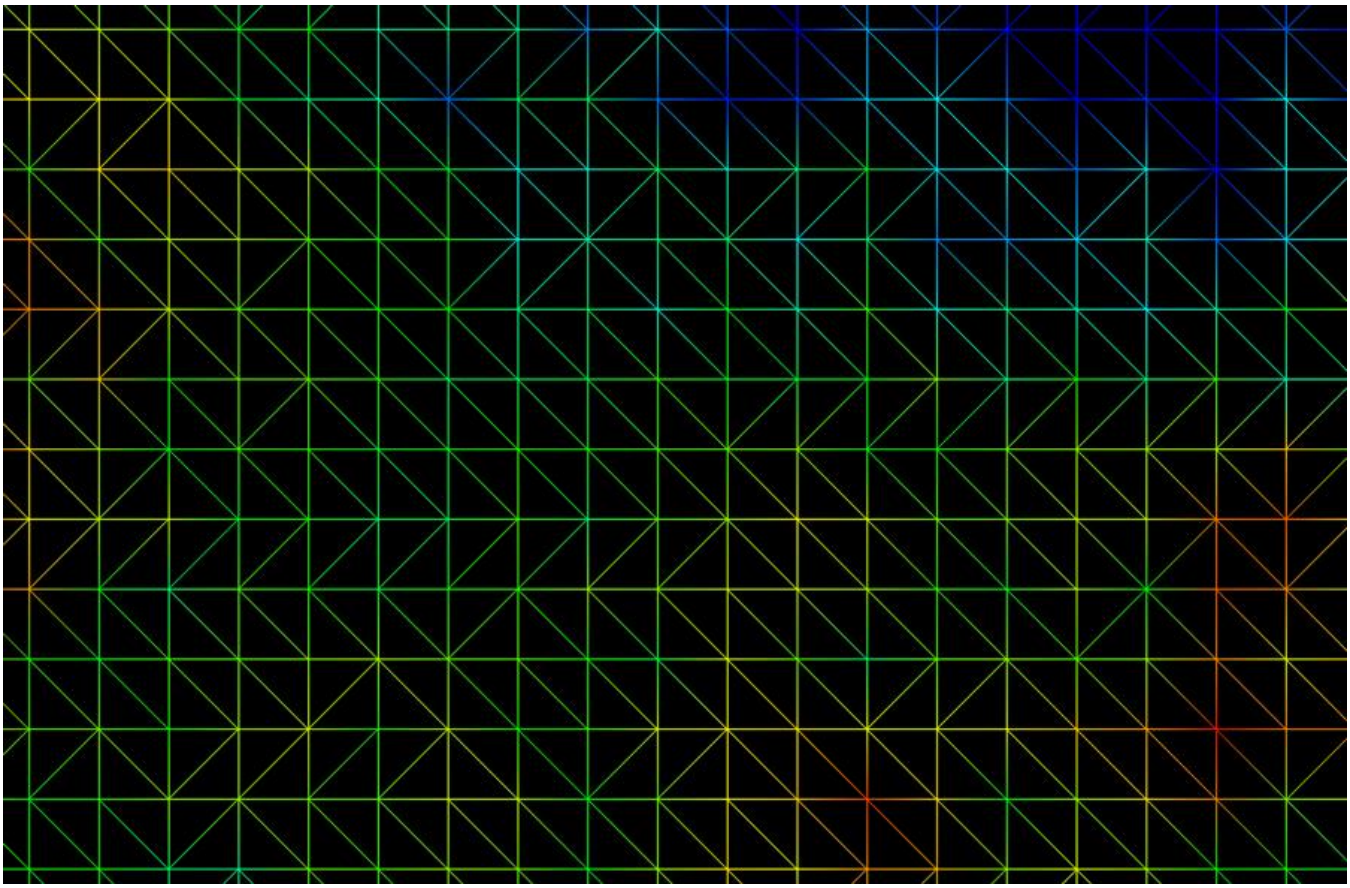

Figure 1: LL to UR or UL to LR, that is the question!

While either diagonal may be correct from the Delaunay criteria, it makes a profound difference when drawing contours. Since our fast TIN was rendering these diagonals in a random (yet correct) fashion, the seams between tiles could exhibit discontinuities. Thus we introduced a predictable (albeit slower to render) TIN. Under Performance Settings (on the Active LAS Layer Properties dialog) there is a new setting for "Fast TIN." This option is on by default. If you are using gridded data and need consistently rendered triangles (for example in contouring), turn Fast TIN off.

View by Physical File:

We have quite a few customers who use LP360 for quality assessment of LIDAR data prior to the step in preprocessing where Point Source ID is assigned. This meant that you had no way to colorize the point data by flight line since these flight lines were not yet assigned. To address this issue, we have added a new display method to the Legend Display methods called "Display by Point Source Files." Using this display method causes LP360 to assign a uniform color to the points that are in the same LAS file. A side benefit of this new feature is that you can now view the true extent of LAS data within the file boundaries. Figure 2 depicts a tiled project displayed by Point Source File.

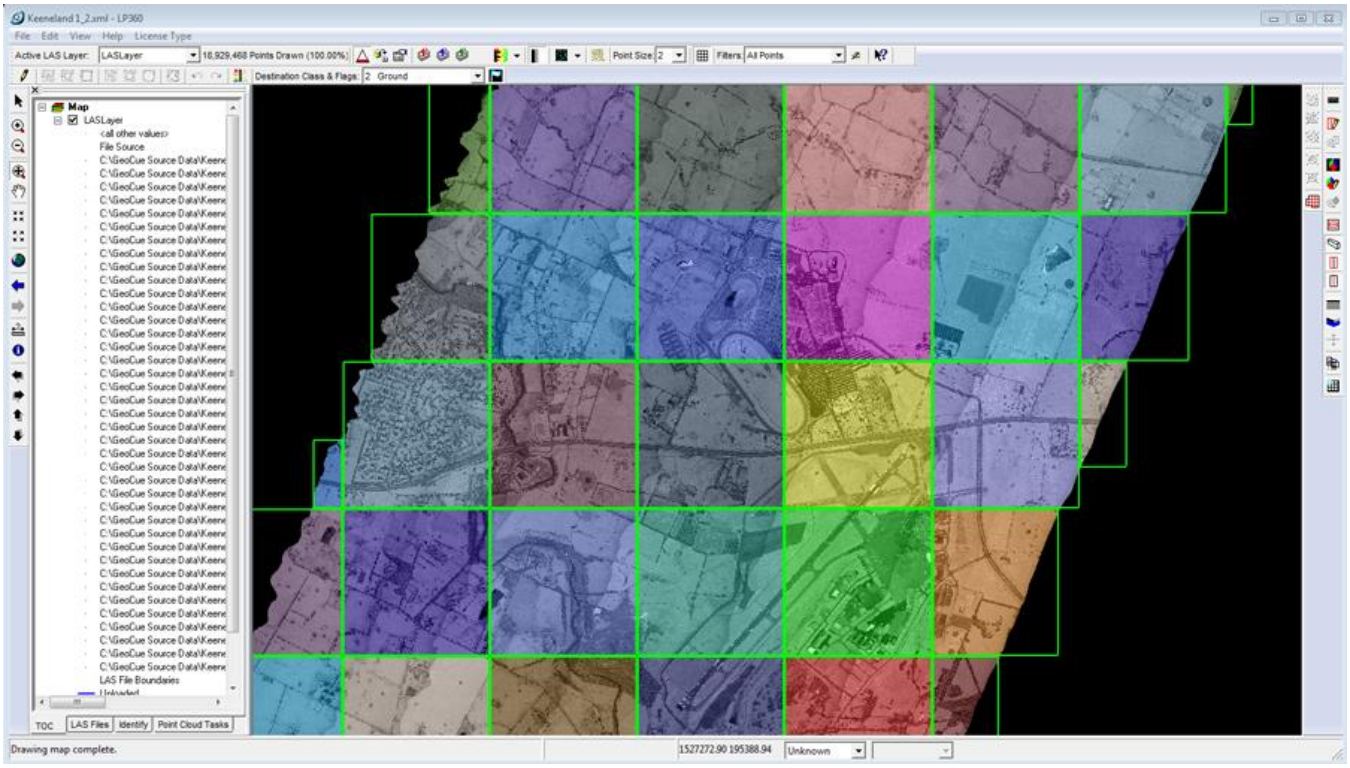

Figure 2: Display by File

In Figure 3 is depicted this same project prior to tiling. Note that this is the same view you would obtain if viewing the tiled project by point source ID. The utility of this new feature, however, is viewing by flight line prior to the lines being assigned in the Point Source ID field of the points.

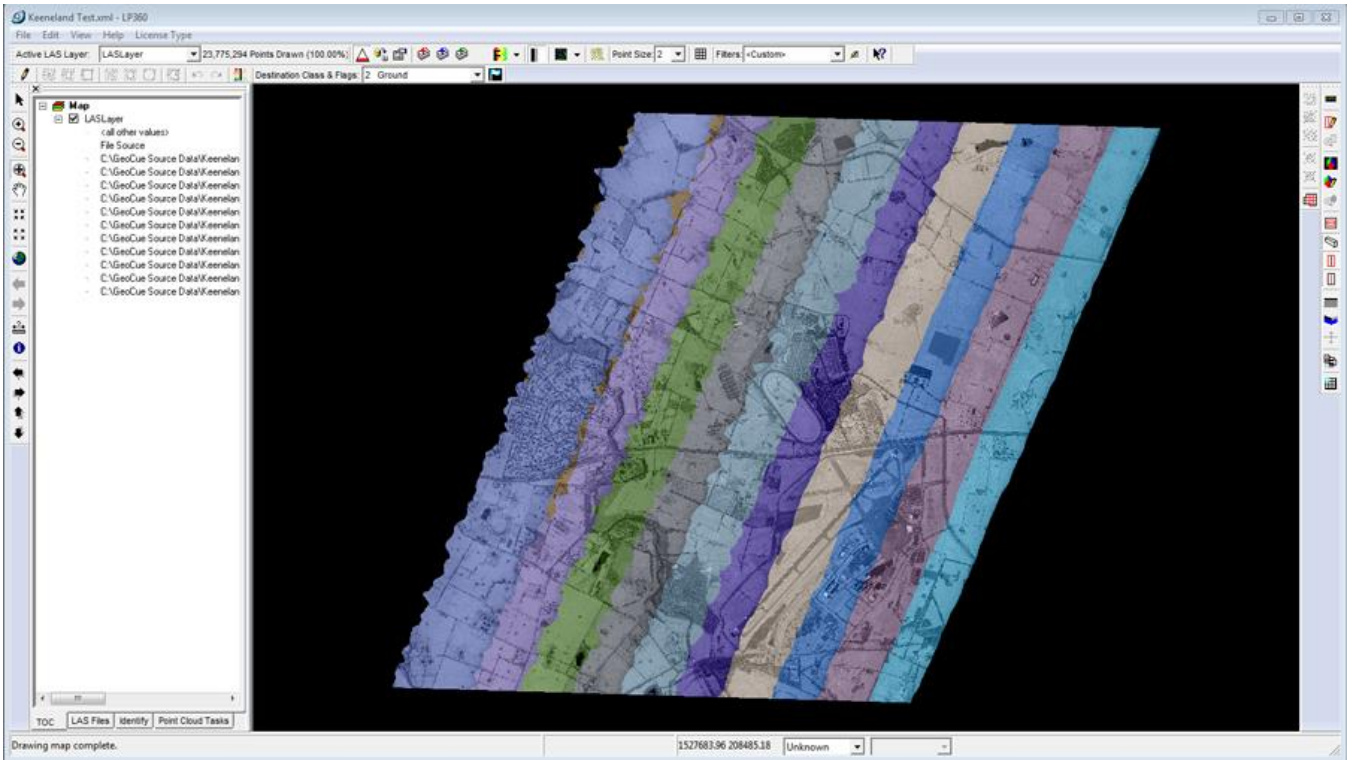

Figure 3: Draw by File, untiled case

Two Channel TIN, Points Display:

I have always found it very annoying that if I want to visualize a project using a TIN display, I either have turn off the points I don't want in the TIN or live with the distraction of a TIN distorted with these extraneous points. As an example, consider the power line corridor of Figure 4. Here I have included all points in the TIN since I want to observe the wires. However, this just makes a big mess of the data since the wires are far above the ground points.

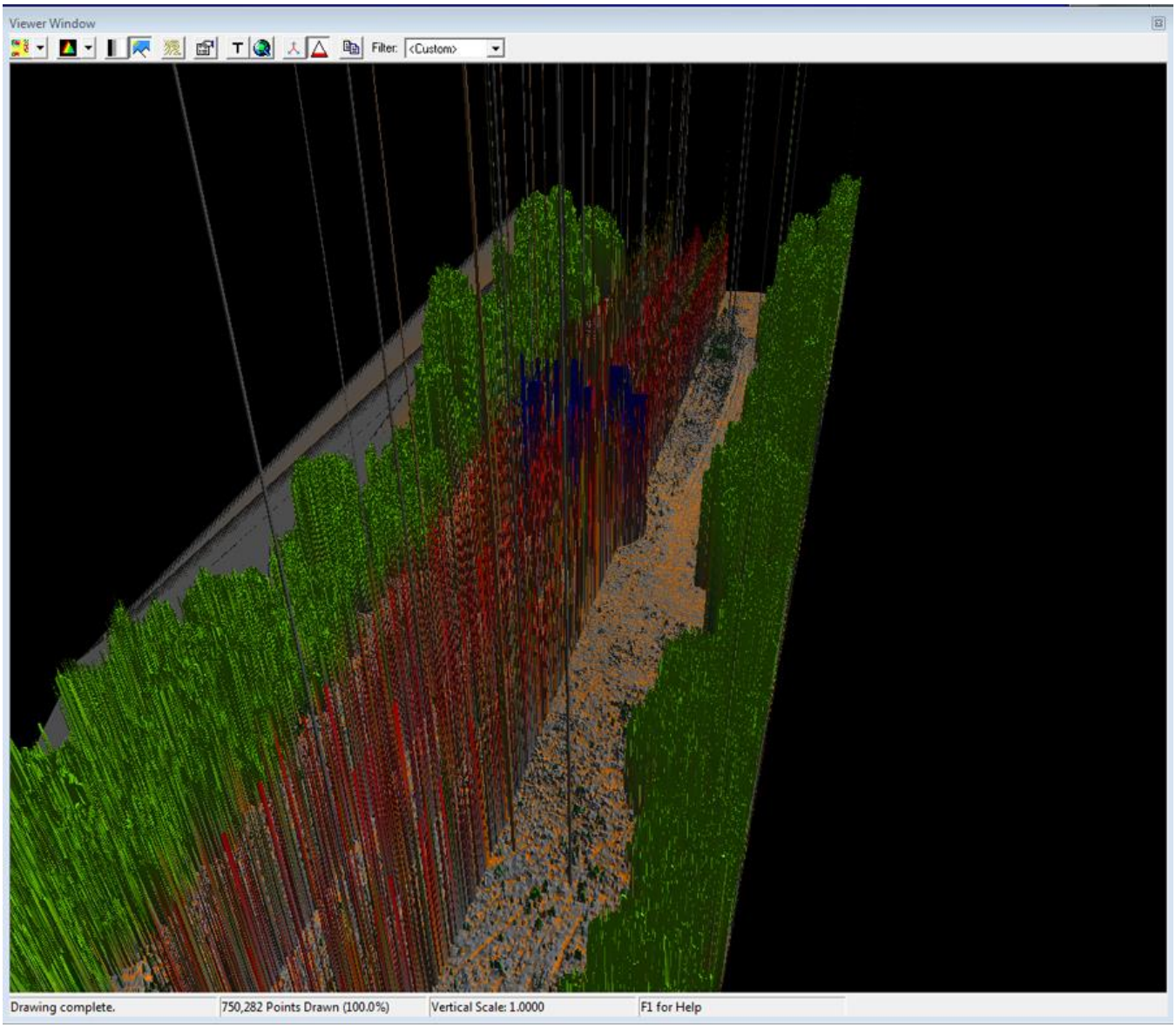

Figure 4: TIN of all points in a Power Line project

To address this problem, we have added the ability to separately specify the points to be used in Points display and those to be used in TIN displays. You will see this via a new tab on the "Active LAS Layer Properties" dialog (Figure 5). Note that you can simply check Use Display Filter for TIN (this will change to say "User Points Filter for TIN" in the next release) if you do not want to make use of this new feature.

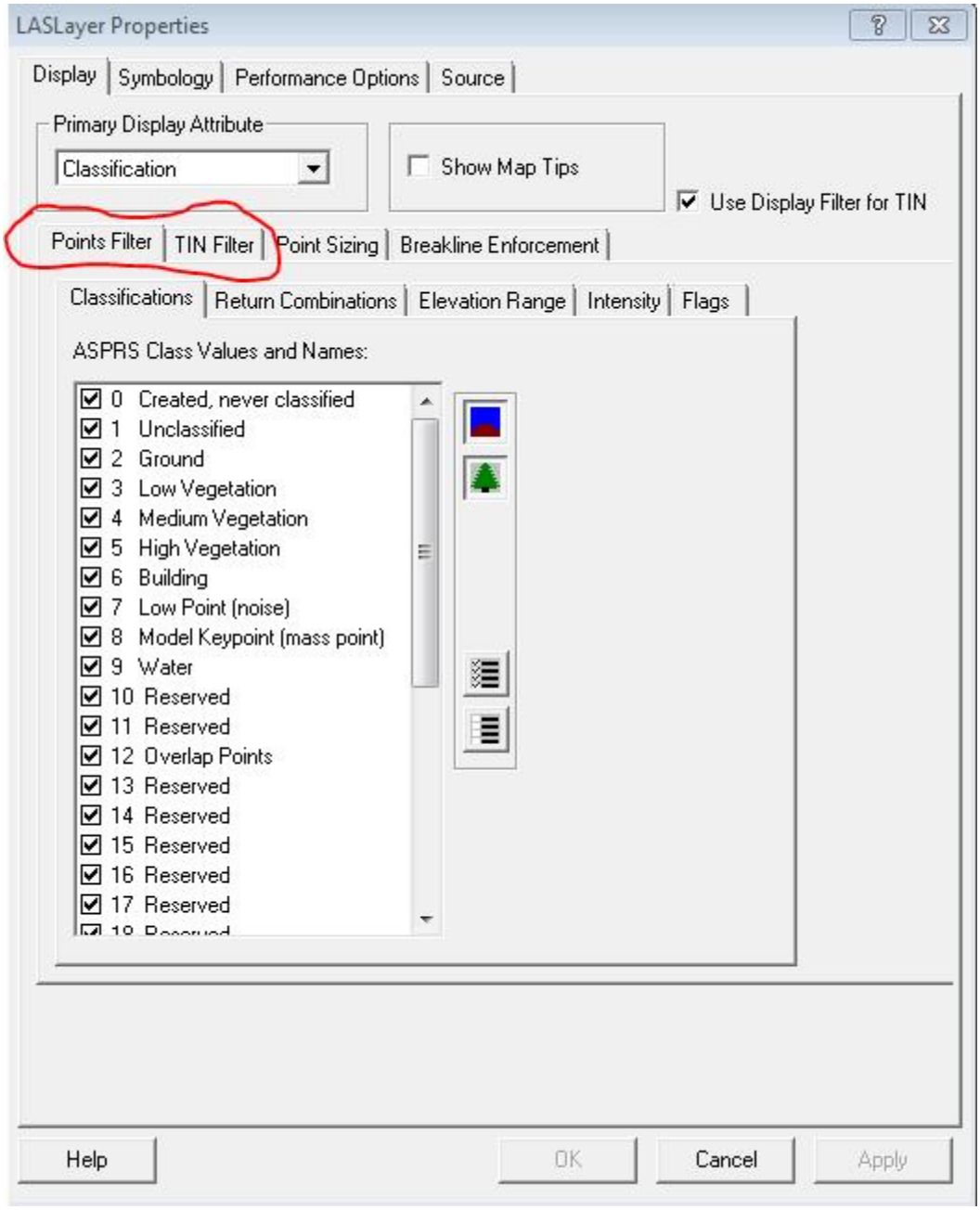

Figure 5: Separate display channels for points and TIN

The value of this new feature is immediately obvious in Figure 6. Here I have directed the Ground and Model Key Points to be rendered in the TIN but all of the above ground points (vegetation, wires, towers) as points. I then set the display mode to "Points on TIN." You do have to get used to using this new "split channel" mode. For example, if I were now to set my display mode to Points, the Ground would not show.

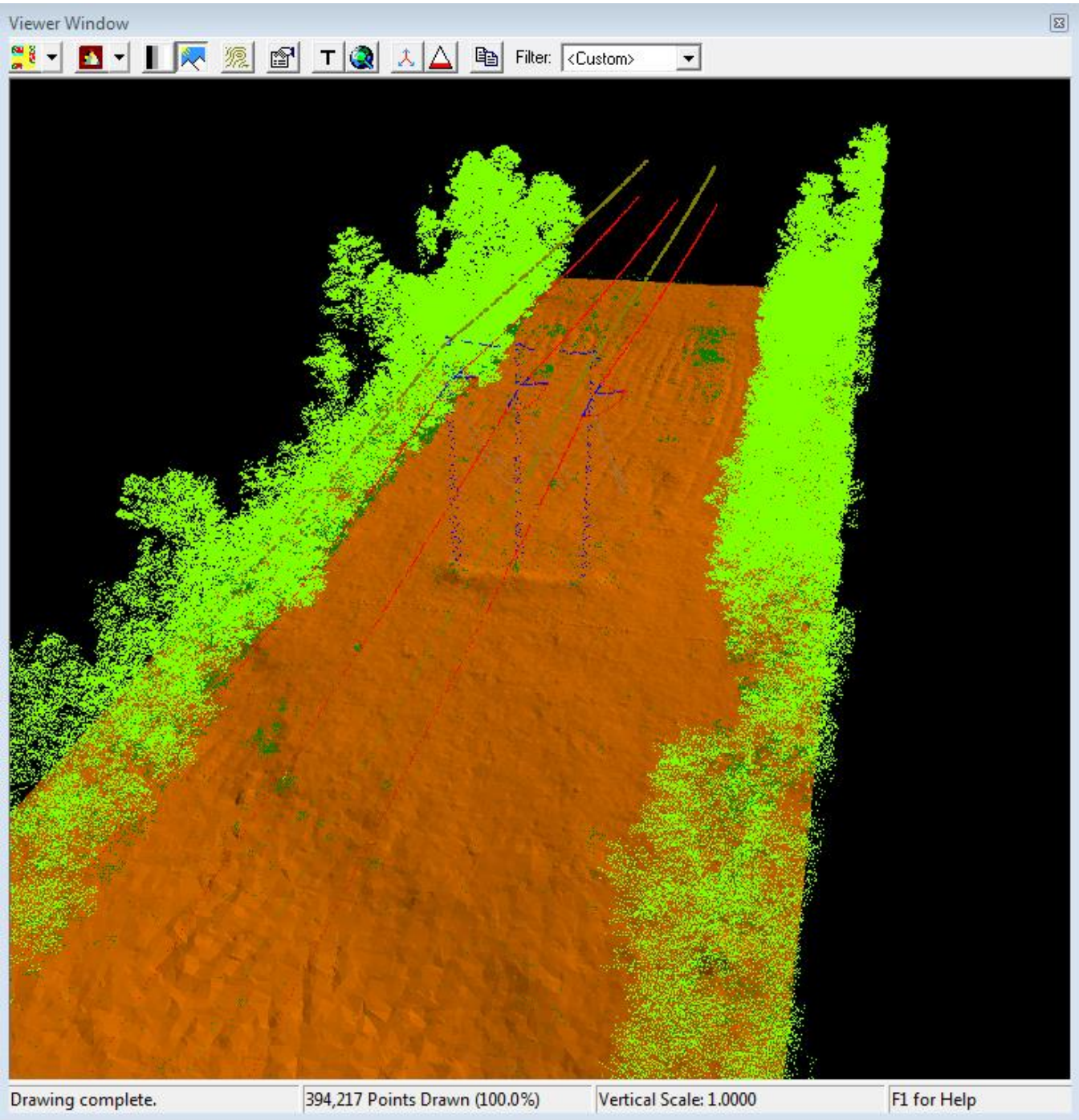

Figure 6: Ground, MKP in the TIN channel, above ground points in the Points channel

Other EXP Features:

There are a few other EXP features in this release but they are so rough around the edges at this time that I would recommend (unless you are the customer for whom we are aiming these developments!) you avoid them. The first is an elevation difference grid generator that is a new capability in the LAS outputs

dialog. The idea is to be able to output an elevation grid that represents the difference between two surfaces. The second is simply some tinkering with the planar feature filter in LP360 Advanced (generally used for the automatic classification of building roofs). We are very actively improving the planar feature extractor and will iterate to a documented improvement, probably by year end.

Summary:

We are constantly adding new features to LP360. Some features are simply the normal evolution that you would expect of a product under active development (this is where a good portion of your maintenance dollars are spent) whereas others are a direct feature request from a customer. In all cases, these features become available to all of our customers via the annual software maintenance agreement. If there is a feature that you would really like to see added to LP360, please send me an email (lgraham@lp360.com). Obviously not every request is fulfilled but I can assure you that every request is carefully reviewed.