TerraSplat User Guide

TerraSplat enables the visualization of Gaussian Splatting files in Spatix and Bentley CAD. It works alone for simple Gaussian Splatting visualization. Enhanced features are enabled when used in conjunction with TerraScan.

Hardware and Software requirements

TerraSplat runs on top of a CAD platform such as Spatix or Bentley MicroStation.

To run TerraSplat, you must have the following:

- NVIDIA GPU with $(0.5 + n)$ GB of VRAM, where n represents the number of 5 million splats you intend to visualize
- Recommended 16 GB VRAM
- NVIDIA GPU with Compute Capability 7.5 or higher
- NVIDIA GPU driver version 581.15 or newer
- SSD hard disc or other storage devices with fast access speed are recommended
- Any of the compatible CAD platforms:

GISware Integro	Bentley CAD (CONNECT Edition or newer)
• Spatix	• MicroStation • OpenCities Map PowerView • OpenCities Map • OpenCities Map Enterprise

Installation

Terrasolid applications are delivered as a .zip file and are downloadable from the Terrasolid website.

The preferred CAD platform needs to be installed before installing TerraSplat. Spatix can be installed using the **Terra for Spatix** Bundle. Instructions can be found in the **TerraScan User Guide**.
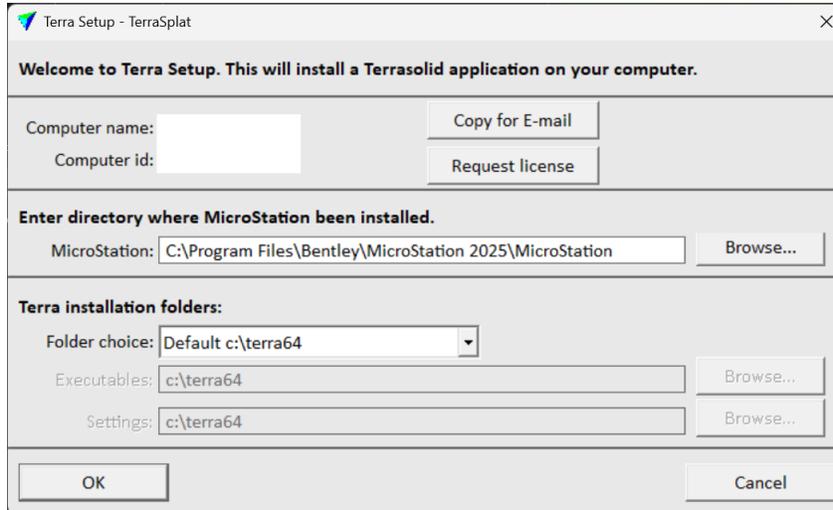
TerraSplat and **TerraStereo** are mutually exclusive and should not be installed/loaded at the same time.

Steps to install TerraSplat on top of a Bentley product:

1. Unpack the zip archive with any zip file manager.

2. First time installation requires starting **setup.bat**. This installs dependencies for TerraSplat to be able to run. If the dependencies have been installed previously, start only **SETUP.EXE**. You must have administrator permission to run setup successfully.

The installation program needs to know where the Bentley product (MicroStation, Map PowerView or any other compatible product) has been installed. It automatically searches all local hard disks to find the Bentley installation directory.

The installation dialog opens:

The dialog is the same for all Bentley products and Terra applications. The labels in the dialog always refer to "MicroStation", no matter what Bentley product is used.

3.   Check the MicroStation directory. Replace the path if the correct location was not found automatically.

4.   Define the installation folder where to install **TerraSplat**. The default **Folder choice** is **Default c:\terra64**. This installs all executables and setting files into the same folder c:\terra64. The folder is created automatically, if it does not exist.

5.   Click OK to start the installation. A message is displayed when the installation is finished.

Install all Terrasolid applications into the same folder(s) to ensure interaction between the applications without trouble.

Steps to install TerraSplat on top of Spatix:

Installation for **Spatix** uses the same .zip file that is used for the **Bentley CAD** installation of **TerraSplat**. Follow the same steps as for the **Bentley CAD** installation while leaving the "MicroStation" directory empty.

If you wish for **TerraSplat** to automatically load when opening **Spatix** then a configuration settings file should be created for **Spatix** using the following steps:

1.   Navigate to the Spatix **includes** folder on your system. This commonly is found through:

```
C:\Users\'current user'\Spatix\config\includes
```

2. Create a new text file in the **includes** folder with the following content:

```
[MiniAppsSettings]

GroupName=Terrasolid

size=1

1\AutoLoad=true

1\CommandArgs=

1\FilePath=C:/terra64/app/tsplat.ix


[TerraSplat]

CategoryName=TerraSplat

TERRADIR=c:/terra64/

TSPLAT_LICENSE=c:/terra64/license/

TSPLAT_PREF=c:/terra64/tsplat/

TSPLAT_SET=c:/terra64/tsplat/

TSPLAT_POOL=0
```

3. Rename the new file to **tsplat.ini**

Starting TerraSplat

TerraSplat is an application that runs on top of **Spatix** (Ix App) or **Bentley CAD** (MDL Application).
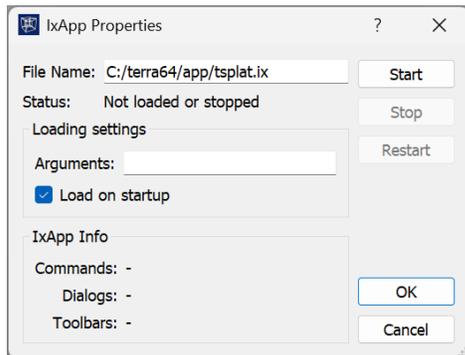
TerraSplat and **TerraStereo** are mutually exclusive and should not be installed/loaded at the same time.

To start TerraSplat in Spatix:

1. Select **Execute** command from the **Ix Apps** menu in Spatix. Then **Choose Ix app to execute** dialog opens, a standard Windows dialog to open a file.

2. Browse to the \APP folder of the Terra applications installation directory. By default, the path is C:\TERRA64\APP.

3. Select the **tsplat.ix** file. You may select other applications as well.

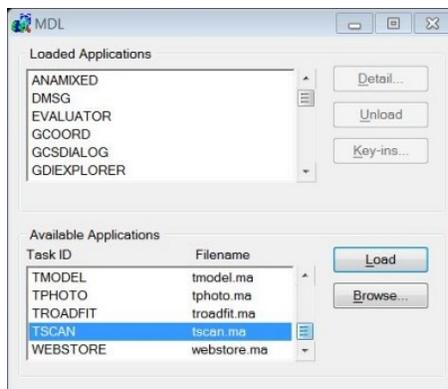4. Click **Open** to start all selected applications.

To enable automatic loading of TerraSplat check the **Load on startup** under the IxApp Properties.

To start TerraSplat on Bentley CAD platform:

1. Select **MDL Applications** command from the **Utilities** ribbon in Bentley CAD.

The **MDL dialog** opens:

2. In the **Available Applications** list, select **TSPLAT**.

3. Click the **Load** button.
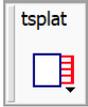
OR

1. Key in

   mdl load tsplat

When the application is loaded, it opens the **TerraSplat toolbox**.

If the **TerraSplat toolbox** is accidentally closed, it can be re-opened with the **Main toolbox** command from the **Toolboxes** submenu in the **Tools** pulldown menu or with the key-in command:
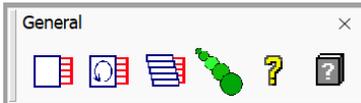
   splat app main

TerraSplat Toolbox

The **TerraSplat toolbox** is opened when **TerraSplat** is loaded.

The toolbox can be re-sized by dragging its lower right corner with the mouse pointer (*Bentley only*). It can be docked to the edges of the CAD platform user interface.

There is 1 toolbar included in the **TerraSplat toolbox**. A toolbar can be displayed by keeping the left mouse button pressed for 1-2 seconds on a tool icon in the **TerraSplat toolbox**. The toolbar pops up and any tool can be selected with a left click. A toolbar can also be extracted from the toolbox by selecting **Open as ToolBox** (Bentley CAD) or **As Toolbar** (Spatix) command from the toolbar pop-up or by selecting the toolbar name from the **Toolboxes** submenu in the **Tools** pulldown menu.

If the **TerraSplat toolbox** is accidentally closed, it can be re-opened with the **Main toolbox** command from the **Toolboxes** submenu in the **Tools** pulldown menu or with the key-in command:

> *splat app main*

Update Loaded

The **Update Loaded** tool should be used after splats have been loaded with the **Load .PLY or .PRJ file** tool. This enables splat visualization.

Reload

The **Reload** tool loads the last shown splat visualization. **Reload** works even after the program has been closed and reopened.

Load .PLY or .PRJ

The **Load .PLY or .PRJ file** tool is used to load new gaussian splat files independent of **TerraScan**. **TerraSplat** can also visualize gaussian splats that are loaded into **TerraScan**. This requires **TerraSplat** to be loaded and the **TerraScan Display mode Color by** setting to be set to **Splat**.

The **Load .PLY or .PRJ file** tool asks the user to open a .PLY file containing the splats that should be visualized. The tool then asks the user to create a .PRJ file that can then be used in the future to load that set of splats. Alternatively, a .PRJ file of a previously opened splat file can be opened.

Adjust Classification Coloring Hue

If the loaded splats in **TerraSplat** or **TerraScan** have classification information the splat coloring can be changed to show the classification coloring based on the loaded .PTC file in **TerraScan**. **Adjust Classification Coloring Hue** allows the user to change the classification coloring hue strength and lightness by inputting a left click in a view and then moving the cursor around in the view. Up is darker and down is lighter. Right is more class coloring and left is less class coloring. Enter a second left click when the desired coloring is shown.
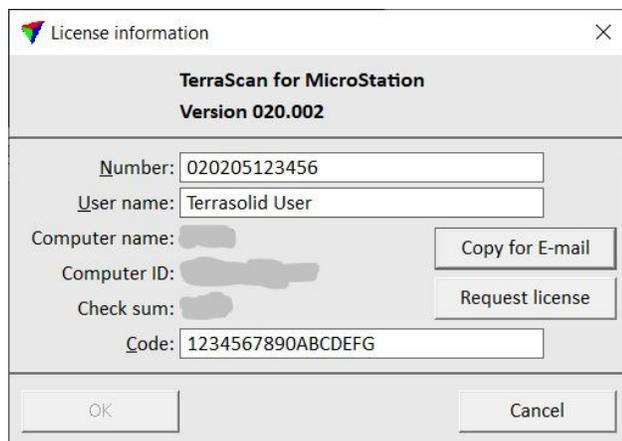
Help on TerraSplat

Help on TerraSplat tool opens the **TerraSplat User Guide**.

About TerraSplat

About TerraSplat tool opens a dialog which shows information about TerraSplat and about the license.

From this dialog, you can open the **License information** dialog which looks the same for all Terra Applications:

Use the **Request license** button to start the online registration for node-locked licenses.

More information about license registration is available on the Terrasolid web page.