

Advice for ImageGroup Import

Image groups are bundles of images that can be uploaded onto the 3DUserNet Platform. These are visually displayed in three formats:



Orientated Panoramics

Orientated Images

Non-oriented Images

For Orientated Images and Panoramics (1, 2), an **orientation** of each image must be provided as well as **position**. Furthermore, a **focal length** is required for adding orientated images (2) to a scene.

For non-orientated Images (3), only a **position** is required, when a user goes to a view in this dataset, the images are positioned in a horizontal orientation and will not align with the data.

Please note that Panoramics (1) must be full **360 by 180 equirectangular projection** images.

When bringing your data into VISION it can extract information from two sources:

(a) EXIF and XMP data:

Our software reads the XMP data from images and takes either DJI format or Microdrones Format to read Course, Pitch, Roll.

It will also extract the focal length either from the XMP data or from 35mmFocalLength tag in the EXIF data.

Latitude, Longitude and Altitude is also extracted from the EXIF data.

(b) CSV files (required for panoramas)

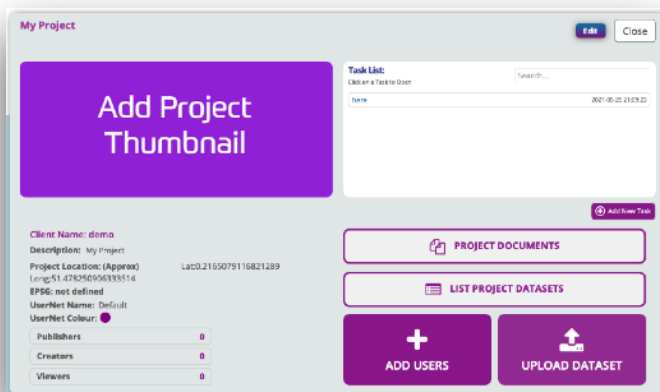
If your image files do not have anything stored in the exif data, or you are importing panoramics, then a **csv** file is **required**. The csv can be either space, comma or tab delimited. Headers are optional as the user can select to ignore a number of lines before the main data columns. The columns can take the following information.

- Filename: filename of image (with or without extension - case sensitive)
- Positional: x, y, z or latitude, longitude, altitude
- Rotational: Course, roll, pitch, or quaternion (q1, q2, q3, q4) or vector angle (ax, ay, az, angle)
- Focal length (as 35mm equivalent)
- Pixel length
- Pixel height

(c) combination of the two

The software will always try to orientate Images, therefore if not all the information is in the csv file it will try and extract any missing information from the EXIF/XMP data. This can be useful as not all software will export the focal lengths.

Uploading to 3DUserNet



In the Project page of the dashboard, select upload Dataset for your project.

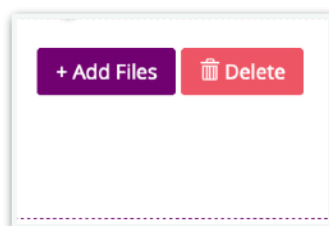
Then select the **Imagery** button followed by the **Image Groups** button

On the next menu select 'Proceed' to get to the options menu.



Select Panoramic if the images are panoramas, select the color and add an optional '**Date of Capture**'.

For Panoramics and Images where you have a **csv** file, select the **Text/CSV** option, this will open up an area for uploading your **csv** file.

The form is titled 'UPLOAD A DATASET' with a close button in the top right. Below the title is a breadcrumb 'Imagery > Image Groups >'. The main heading is 'Choose your Settings'. There's a blue button that says 'NEED HELP ON WHICH ONE TO USE'. Below this are four settings: 'Panoramic:' with a 'No' (selected) and 'Yes' toggle and a help icon; 'Text/Csv file available:' with a 'No' (selected) and 'Yes' toggle and a help icon; 'Select Image Group Color:' with a blue color picker and a help icon; and 'Date of Capture:' with a date input field showing 'dd / mm / yyyy' and a help icon. A text box at the bottom explains: 'In Imagegroups your images should either be aligned to WGS84 (EPSG code:4326), or in the same coordinate system as your other data. For images that are aligned using WGS84, The EPSG of the project must be defined.' At the very bottom are 'Back', 'Proceed', and 'Close' buttons.

After it has been uploaded you will be taken straight to the following menu:

CSV / TXT Formatting

PRESETS: Custom

Lines till data: 1

Delimiter: Tab Space Comm

Data Order: Unused Unused Unused Unused Unused Unused Unused

#name,x,y,alt,heading,pitch,roll,f,px,py,k1,k2,k3,k4,t1,t2
DJI_0316.JPG,-
15.01684203022426,12.44770829752088,30.98589554429054,138.3511000661987,2.285818612245088,-
2.219175088562895,24.68134623111035,3.560123187732104e-004,3.802799138437206e-
003,1.11311359597056e-002,-1.502052376446283e-002,1.533221638760188e-002,0,0,0
DJI_0317.JPG,-
10.1063276051816,6.827896941453219,31.31164829153568,137.4551067618093,2.239652531143983,-
1.582889419114728,24.68134623111035,3.560123187732104e-004,3.802799138437206e-
003,1.11311359597056e-002,-1.502052376446283e-002,1.533221638760188e-002,0,0,0
DJI_0318.JPG,-
5.844003621527246,3.315860872156918,31.37829970568419,136.9629789833339,2.138338534333903,-
1.396785195769501,24.68134623111035,3.560123187732104e-004,3.802799138437206e-
003,1.11311359597056e-002,-1.502052376446283e-002,1.533221638760188e-002,0,0,0
DJI_0319.JPG,-1.641600590542123,-
0.4430040498264134,31.51707703713328,137.1748499452614,2.051394382505441,-
1.192351367612078,24.68134623111035,3.560123187732104e-004,3.802799138437206e-
003,1.11311359597056e-002,-1.502052376446283e-002,1.533221638760188e-002,0,0,0

Proceed Close

The textbox at the bottom is to help the user understand the file that they have loaded.

At the top, you can select a **Preset** from known manufacturer export formats. If you have generated your csv through another package, then you will have to fill the form manually.

- **Lines till Data:** number of lines the the program can ignore before the data columns.
- **Delimiter:** The type of character that separates the columns.
- **Data Order:** Here you define the column order, please note a single dropdown can cover multiple columns, i.e. columns X, Y and Z are added when you select 'XYZ' from the dropdown.

Once this table is complete, click on 'Proceed' to take you back to the previous menu.

UPLOAD A DATASET

Imagery > Image Groups > Upload >

140 GB Remaining

Upload your files

+ Add Files

You can also Drag & Drop Files

Drop files here

Back Upload Close

Once you are happy with your options, selection 'Proceed' again to go onto the Upload page.

Here you can either upload your images by selecting them all and dropping them in, or you can compress them into a .zip file and upload the compressed file.

Please make sure that your images are in the root of the zip file and that you have no folders in the zip file.

Examples of CSV file for Image Import:

Menu Options:

| #name | x | y | alt | heading | pitch | roll | f | px | py | k1 |
|--------------|---------------|--------------|-----------|------------|---------------|----------------|---------------|----------------|----------------|----|
| DJI_0316.JPG | -15.016842030 | 12.447708297 | 30.985895 | 138.351100 | 2.28581861224 | -2.21917508856 | 24.6813462311 | 3.560123187732 | 3.802799138437 | |
| DJI_0317.JPG | -10.106327605 | 6.8278969414 | 31.311648 | 137.455106 | 2.23965253114 | -1.58288941911 | 24.6813462311 | 3.560123187732 | 3.802799138437 | |
| DJI_0318.JPG | -5.8440036215 | 3.3158608721 | 31.378299 | 136.962978 | 2.13833853433 | -1.39678519576 | 24.6813462311 | 3.560123187732 | 3.802799138437 | |
| DJI_0319.JPG | -1.6416005905 | -0.443004 | | | | | | | | |
| DJI_0320.JPG | 2.51849343186 | -4.485290 | | | | | | | | |

PRESETS: Reality Catpure Images

Lines till data 1

Deliminator Tab Space **Comm**

Data Order File Nan XYZ Course Focal Unused Unused Unused

Examples of CSV file for Panorama Import:

Menu Options:

| | | | | | | | | | | |
|---------------|-------------|---------------|-----------|---------------|---------------|-------------|-----------|-----------|----------|--|
| iQLib | 8.0.1.4647 | | | | | | | | | |
| Scans | { | | | | | | | | | |
| phase1_part01 | 458222.1255 | 221837.194153 | 81.728473 | 1 | 0 | 0 | 0 | | | |
| phase1_part02 | 458246.1257 | 221814.730447 | 77.976547 | 1 | 0 | 0 | 0 | | | |
| Scan_016 | 458219.3017 | 221820.684059 | 76.394404 | -0.0037185332 | 0.00743646 | -0.99996544 | 139.45562 | 27.2.2019 | 13:56:55 | |
| Scan_017 | 458222.3620 | 221824.361894 | 76.171718 | 0.012631013 | 0.012959352 | 0.99983624 | 101.87849 | 27.2.2019 | 14:7:27 | |
| Scan_018 | 458221.2510 | 221824.941161 | 76.078109 | 0.011605148 | -0.0032933669 | -0.99992723 | 98.757685 | 27.2.2019 | 14:13:17 | |
| Scan_019 | 458222.4617 | 221827.797237 | 76.087599 | -0.0042181795 | 0.0017830504 | -0.99998951 | 179.78772 | 27.2.2019 | 14:19:14 | |
| Scan_020 | 458219.3958 | 221828.37811 | | | | | | | | |
| Scan_021 | 458216.5919 | 221829.564743 | | | | | | | | |

PRESETS: FaroScene Panos

Lines till data 5

Deliminator Tab **Space** Comm

Data Order File Nan XYZ Vector / Unused Unused Unused Unused