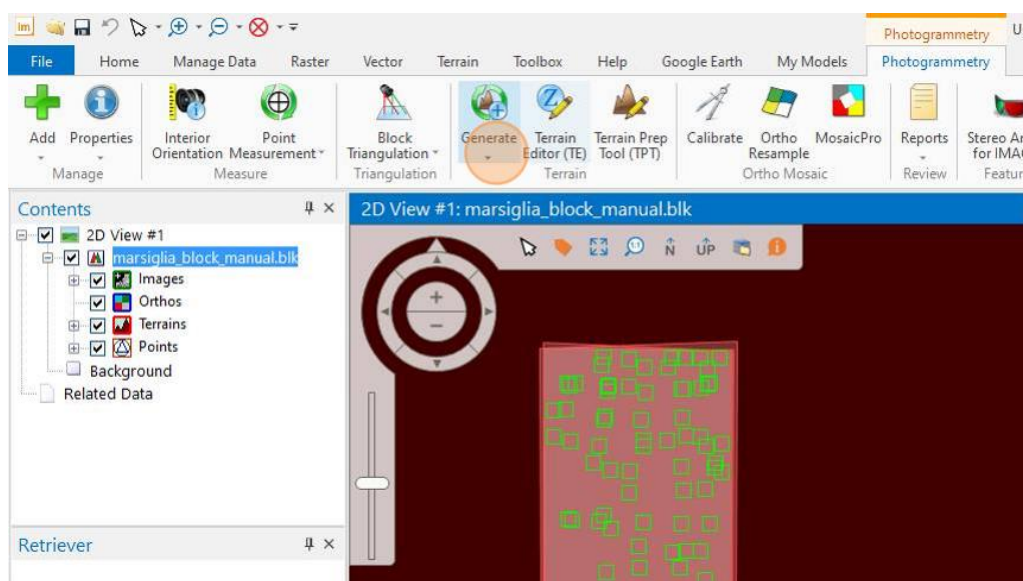
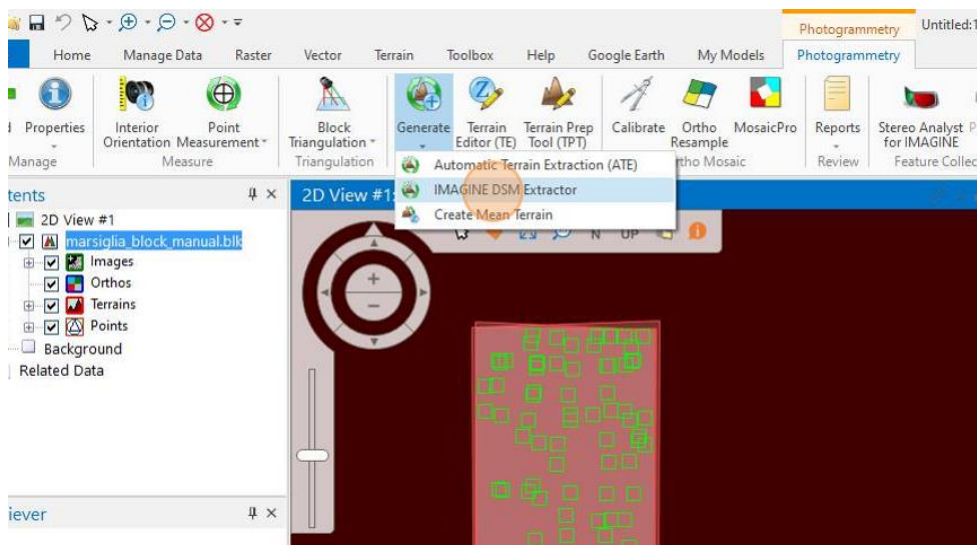


Create 3D Models using IMAGINE DSM Extractor.

1. This tutorial starts from the Marsiglia block file. Please open it in ERDAS IMAGINE.

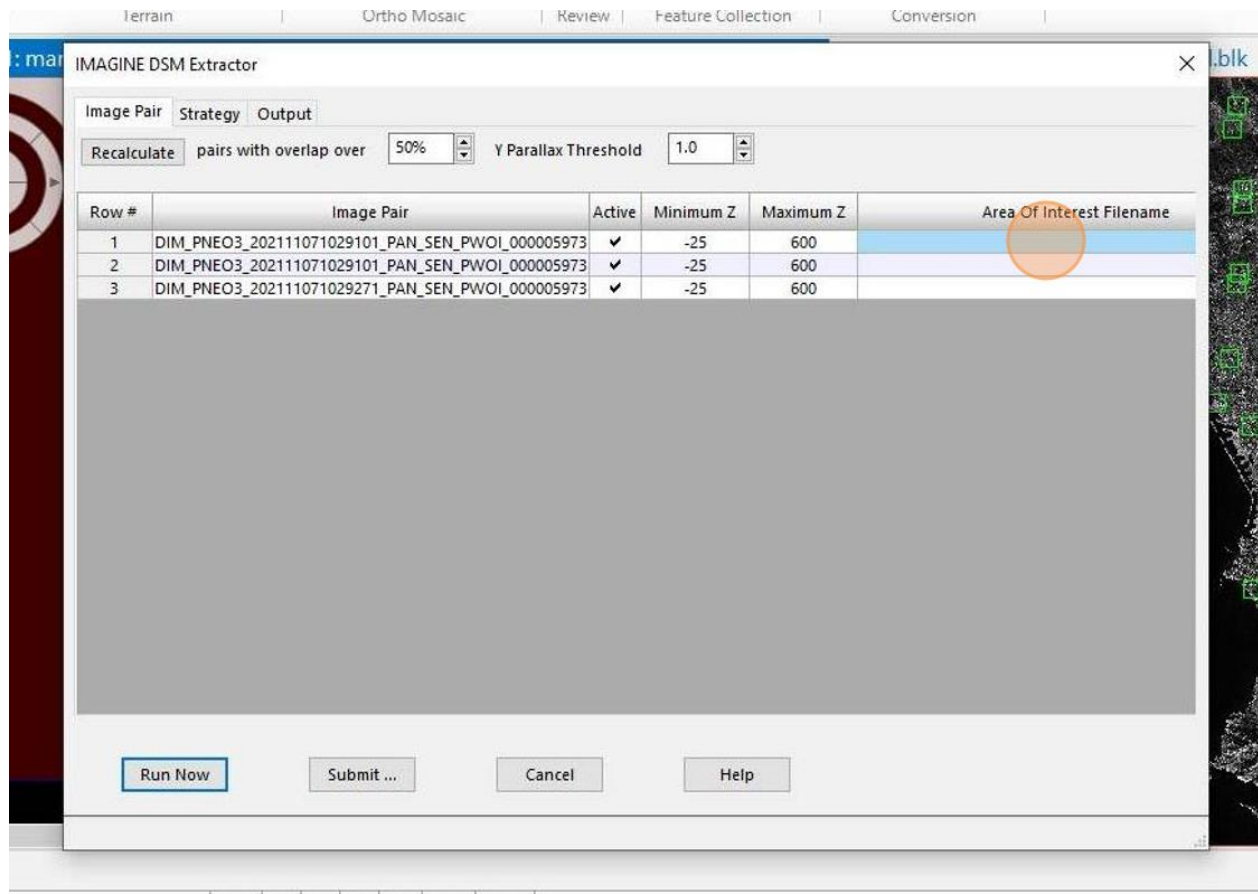


2. Then click on Generate > IMAGINE DSM Extractor

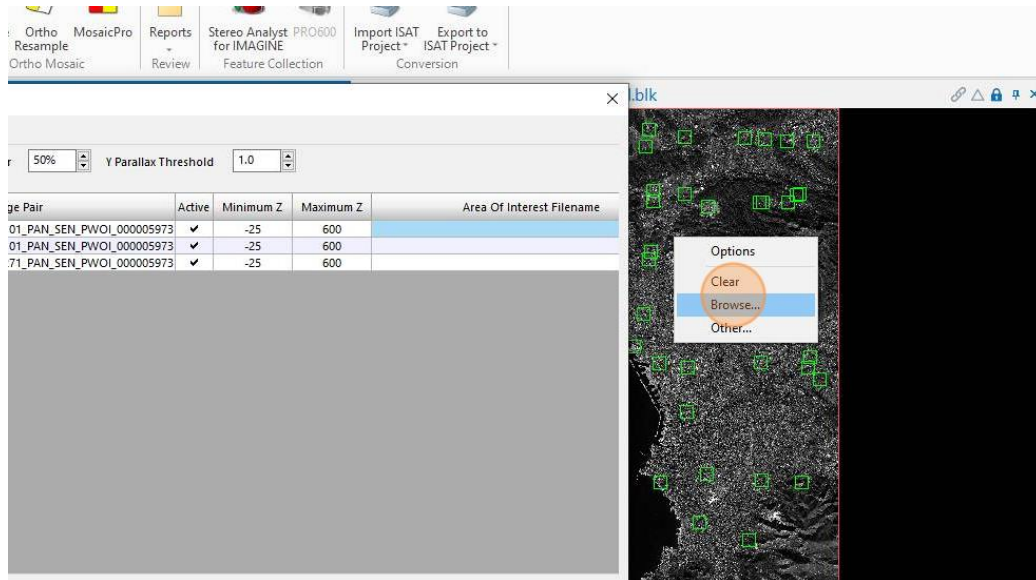


3. As you can see in this project we have 3 stereo pairs available for the processing. So we will produce 3 las file (3 different DSM models). Later in the exercise we will merge them in a single las file.

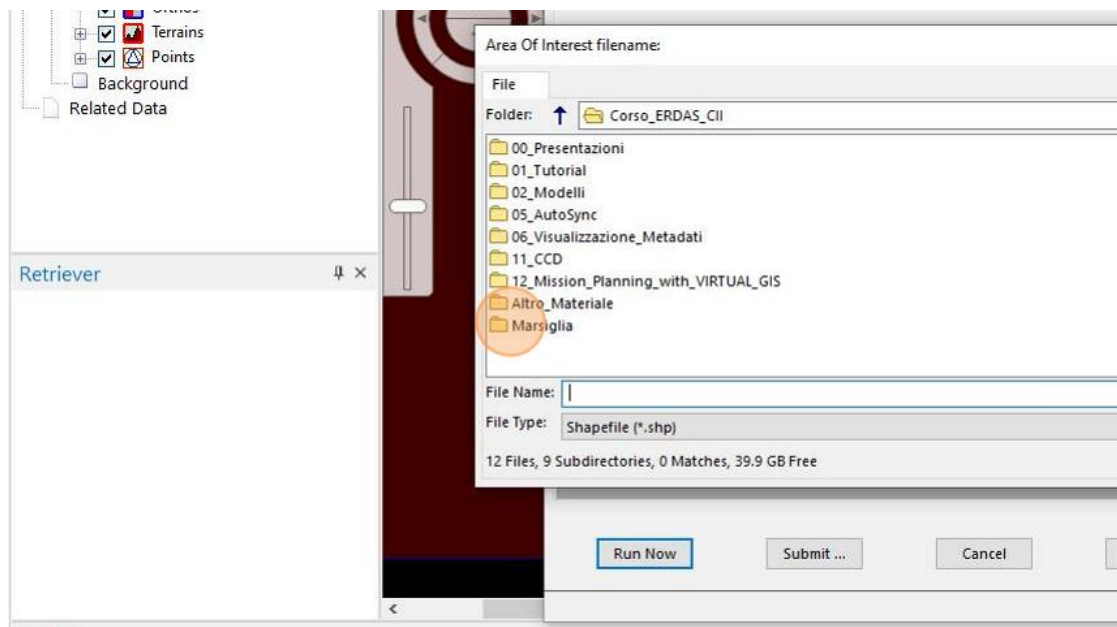
In the IMAGINE DSM EXTRACTOR wind go in the "Area of Interest Filename" column.



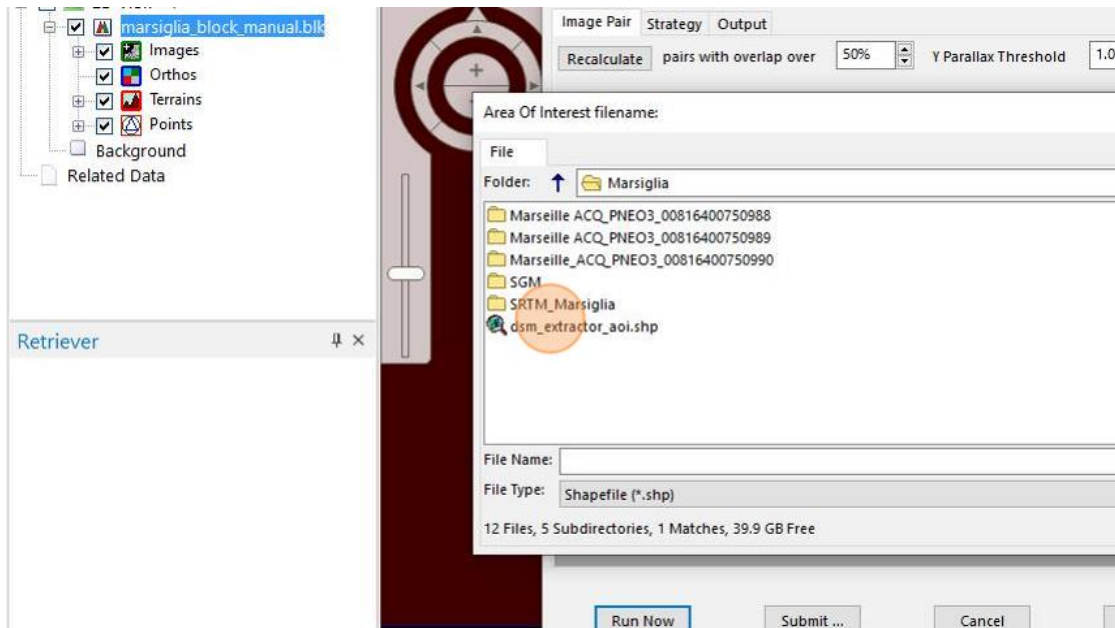
4. Click "browse"



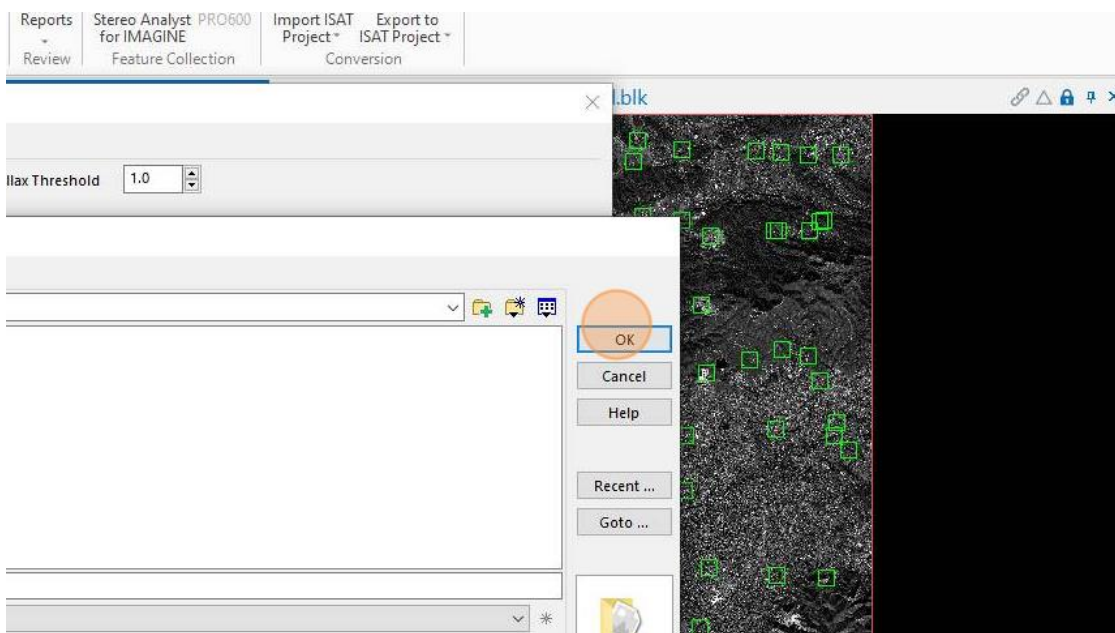
5. Select the "Marsiglia" folder



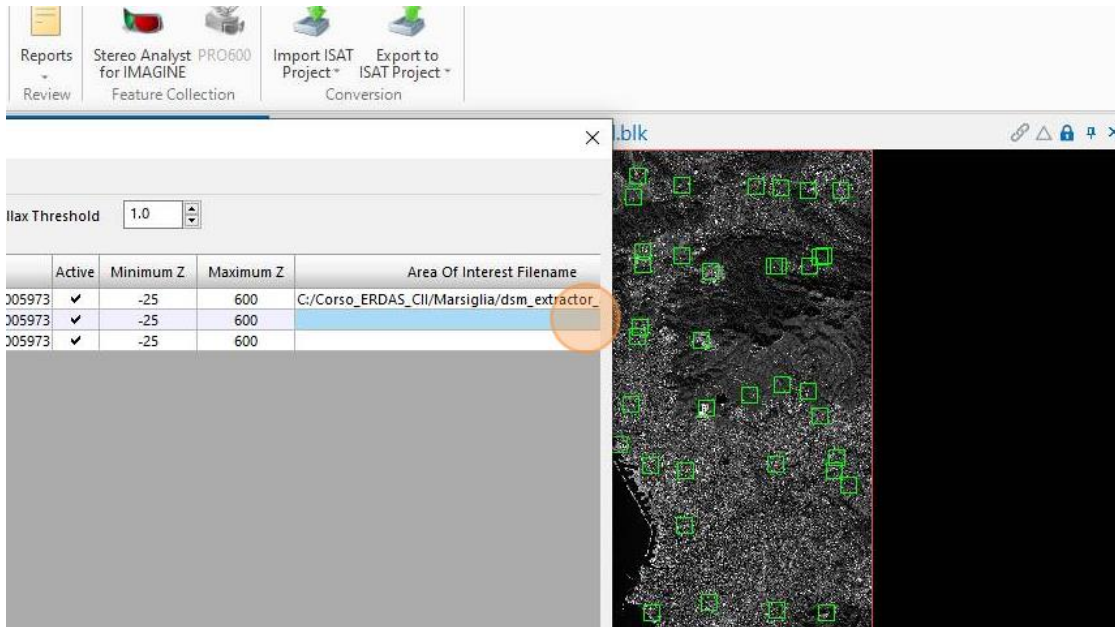
6. Then choose the "dsm_extractor_aoi.shp" shapefile



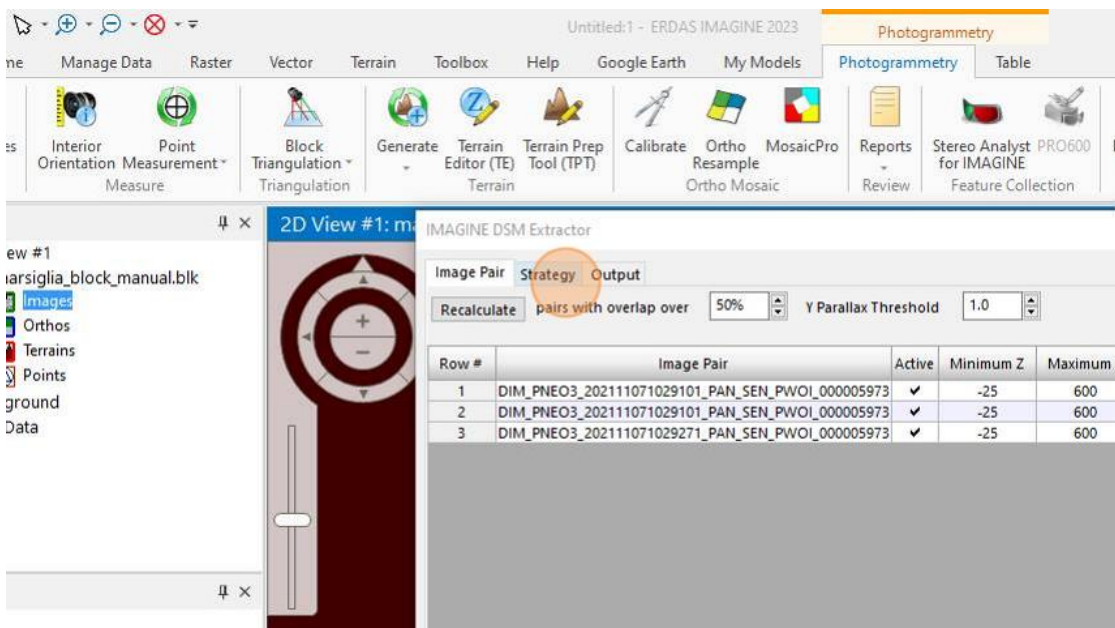
7. Click "OK"



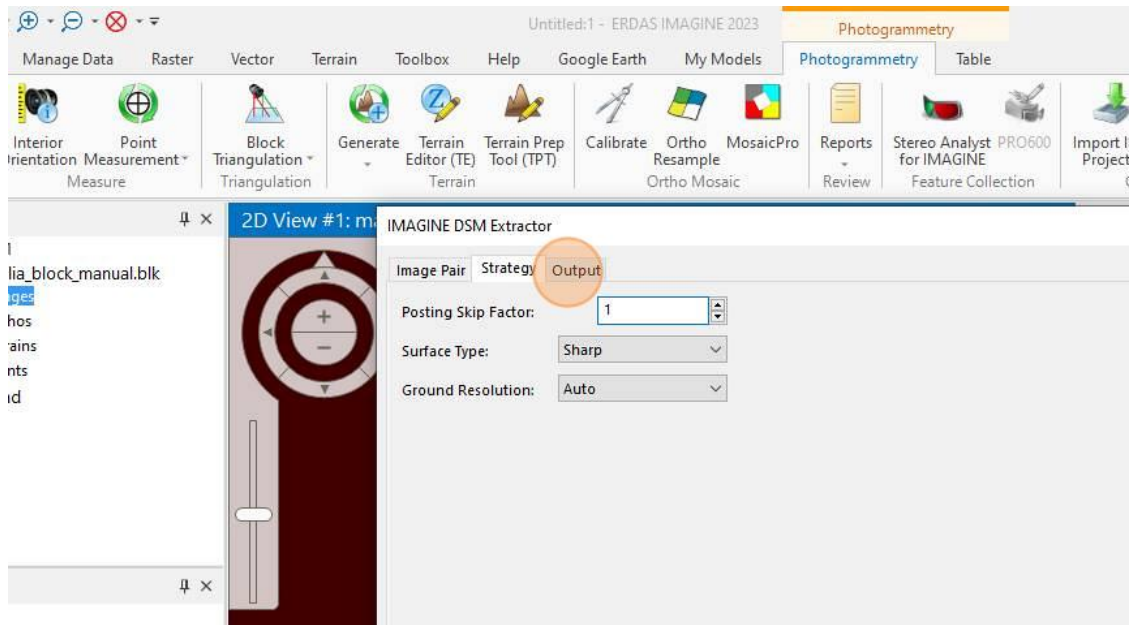
8. Do the same for the other two rows of the table.



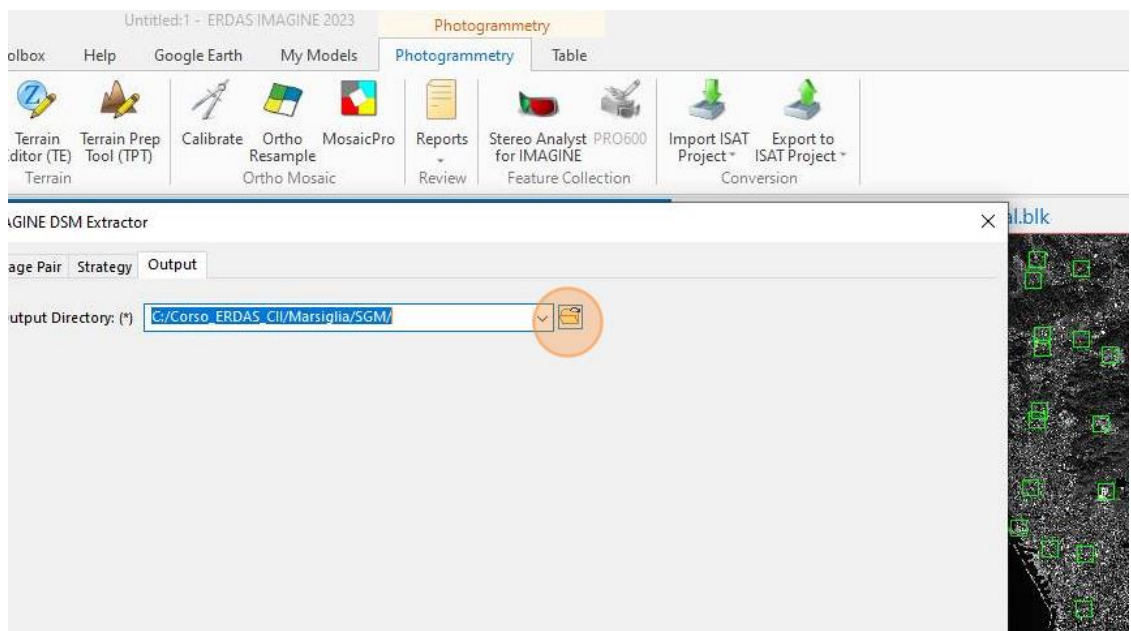
9. Now click "Strategy" to define the parameters of the extraction. For this exercise leave the default one.



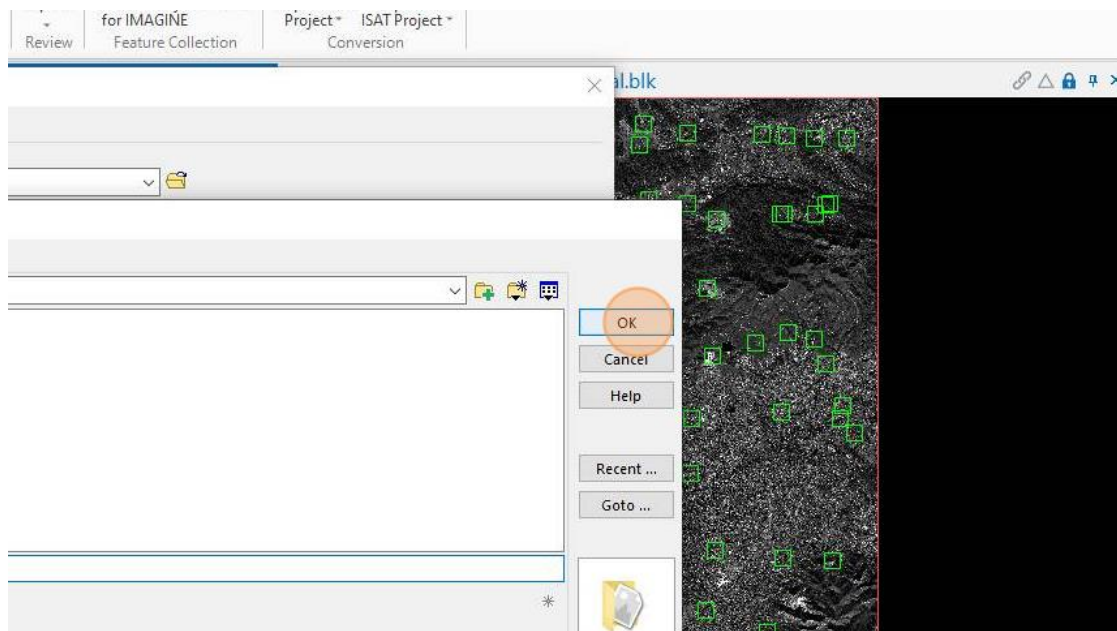
10. Click on the "Output" tab.



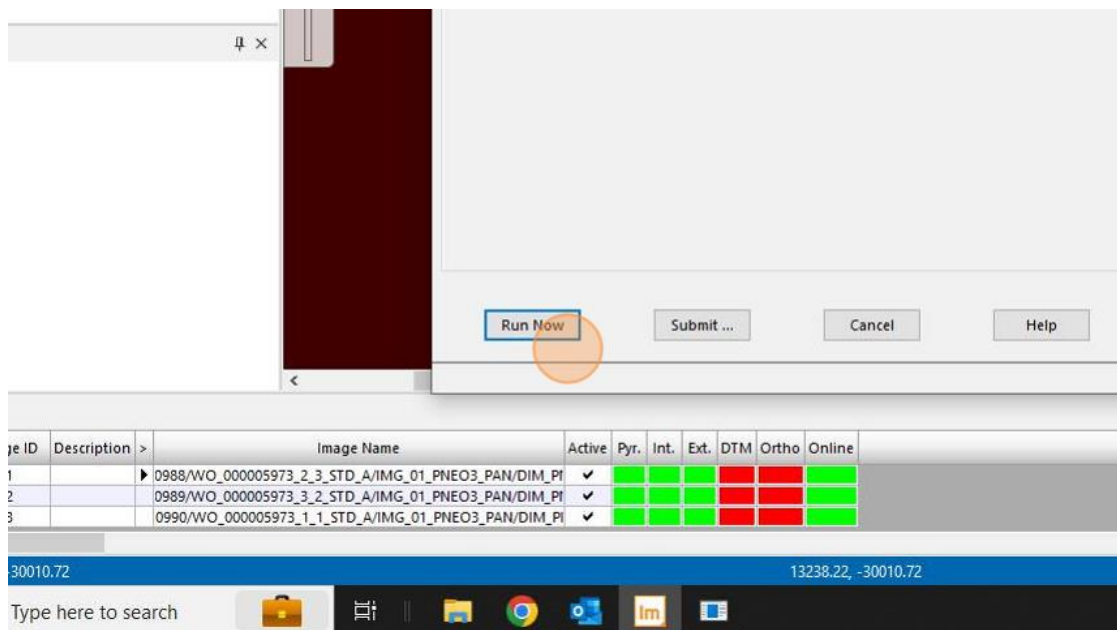
11. Select the folder "C:\Corso_ERDAS_CII\Marsiglia\SGM"



12. Click "OK"

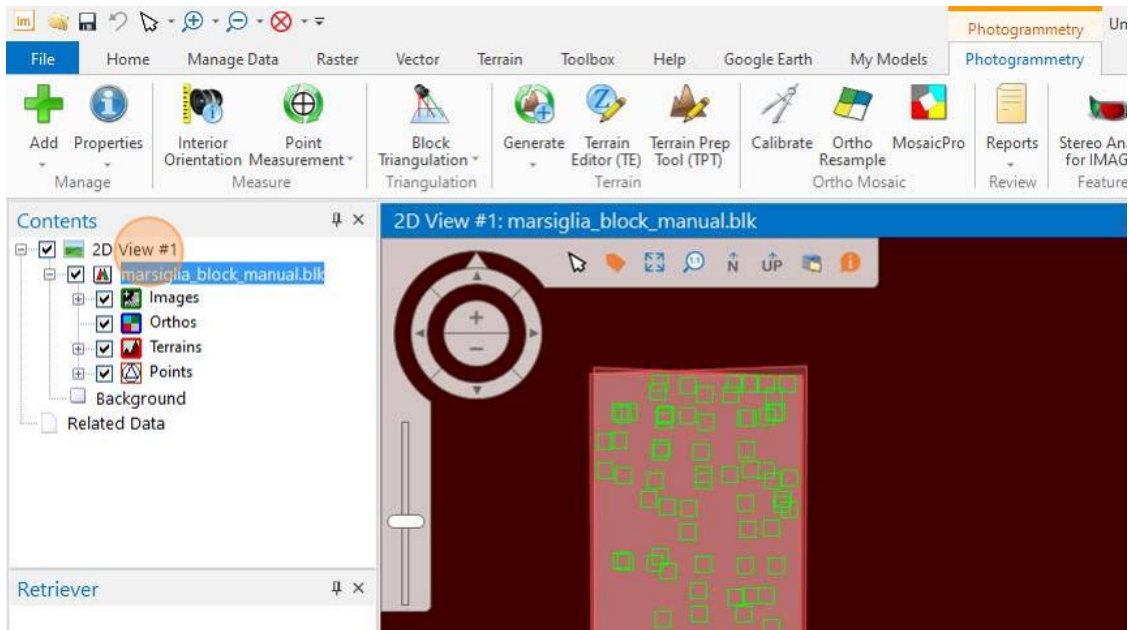


13. Click "Run now" to start the process.

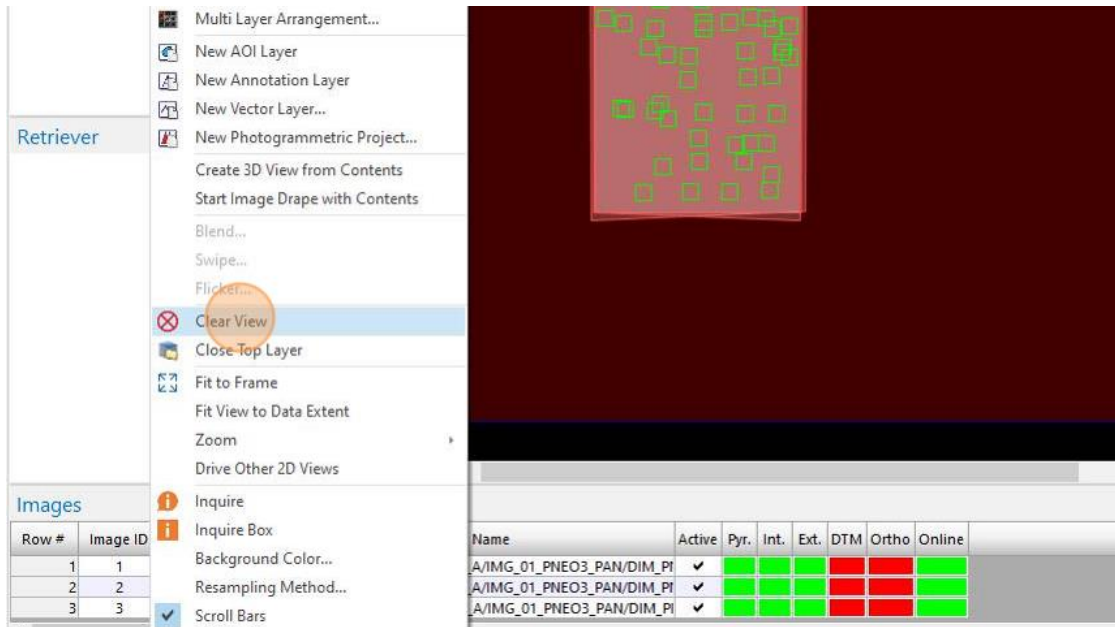


14. This step will take some time, according to the extension of your AOI, the resolution of the image and the specs of your workstation.

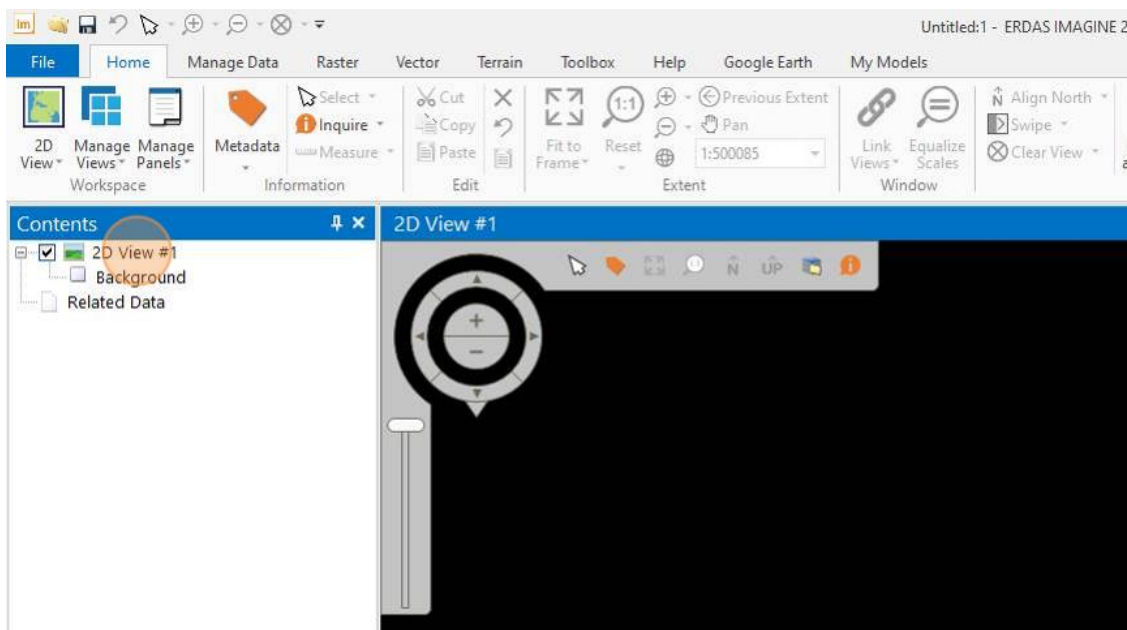
15. When the extraction process end please remove the block file from the 2D view:
Right click on 2D view



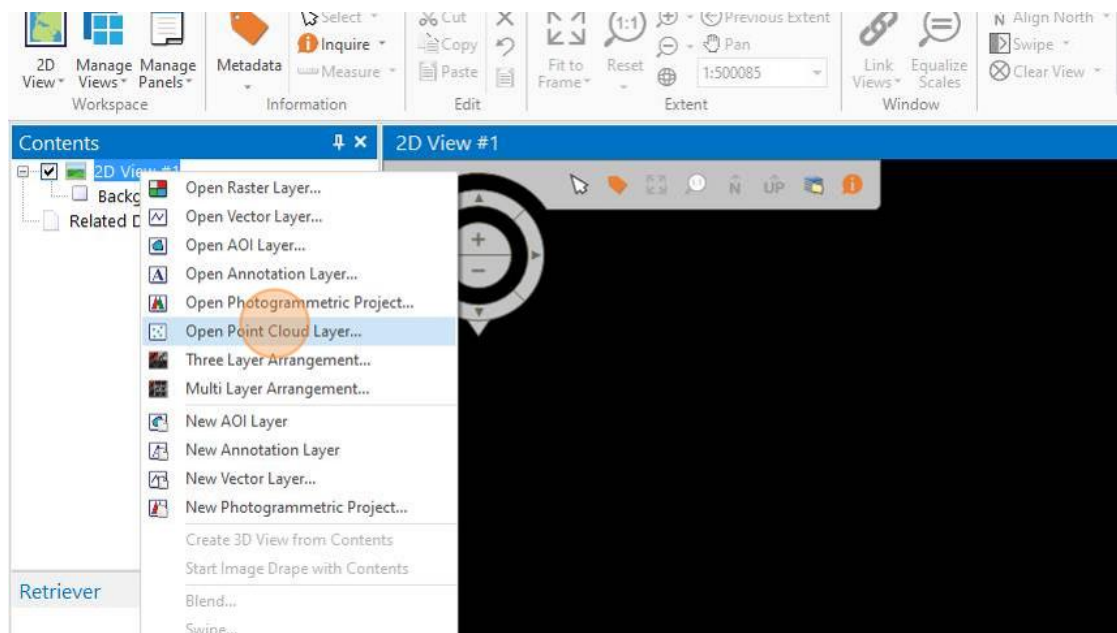
16. Click "clear view".



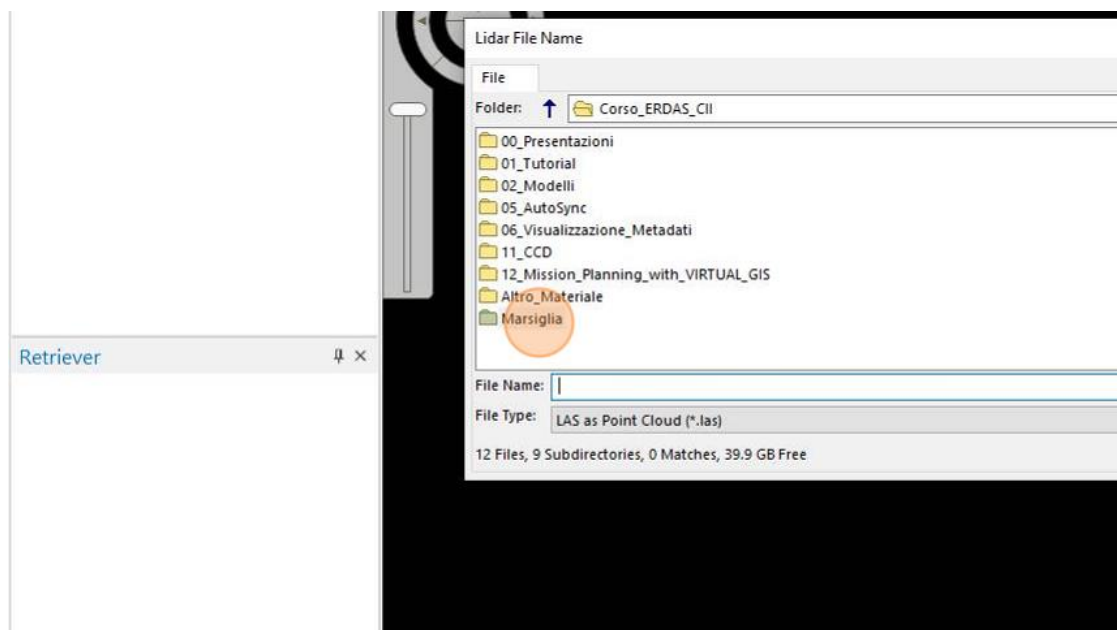
17. Right-click on 2D view:



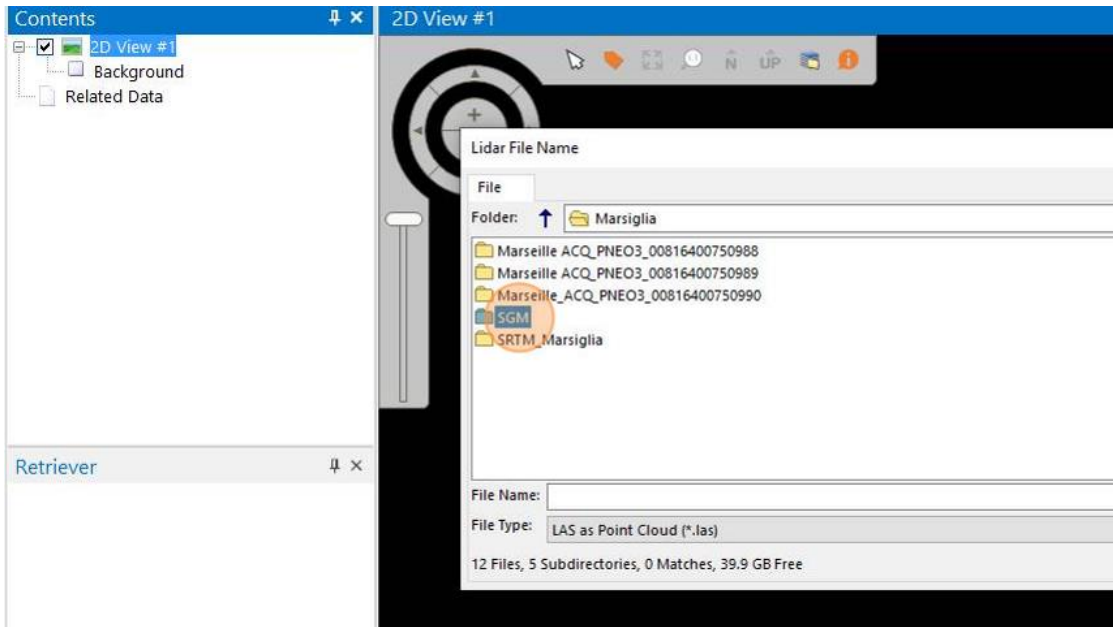
18. Click "open point cloud layer"



19. Go inside the Marsiglia folder:

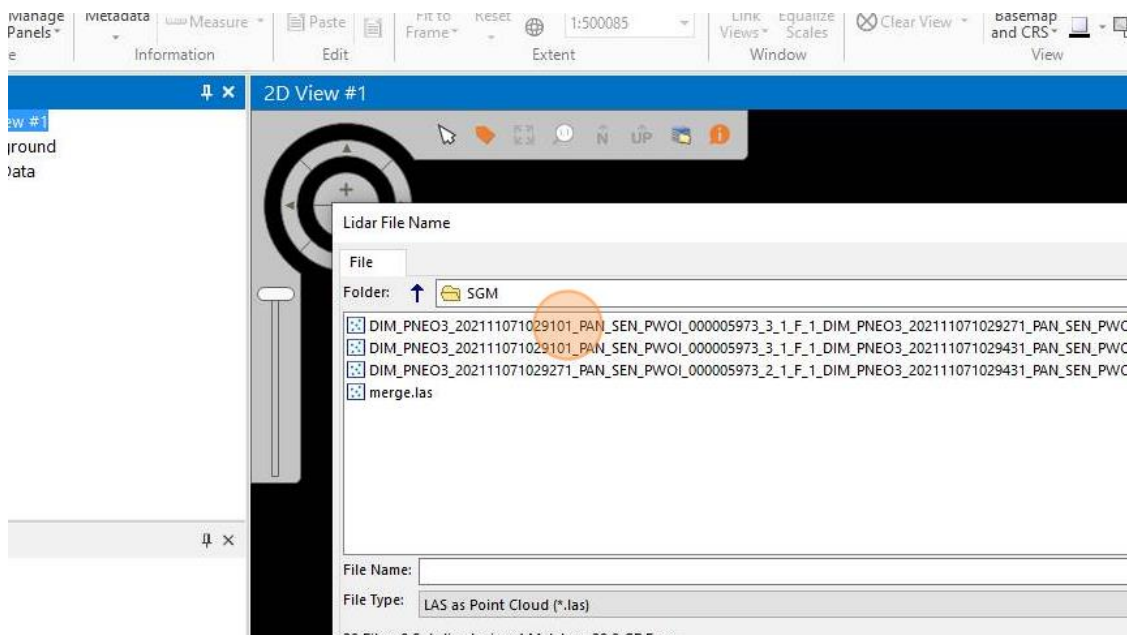


20. Inside SGM folder

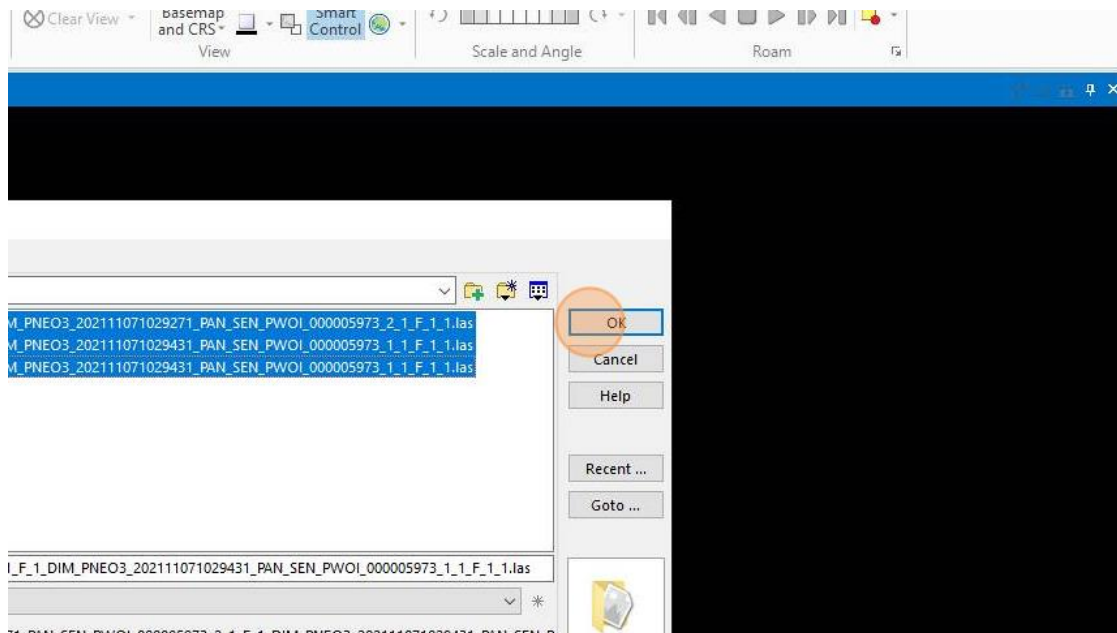


21. Open the first las, called:

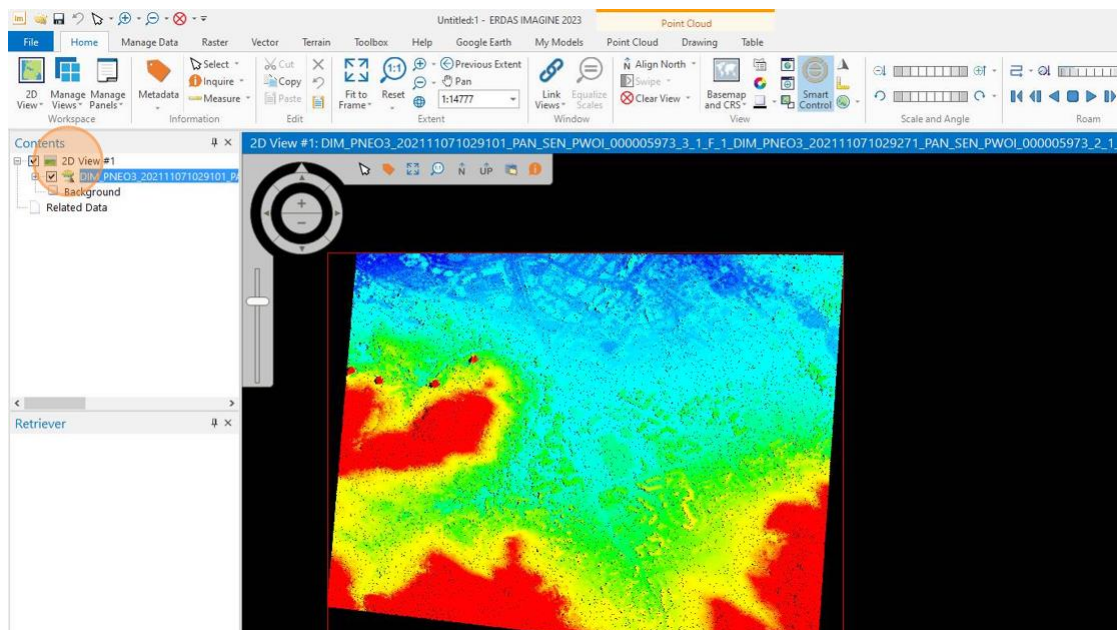
"DIM_PNEO3_202111071029101_PAN_SEN_PWOI_000005973_3_1_F_1_DIM_PNEO3_202111071029271_PAN_SEN_PWOI_000005973_2_1_F_1_1.las"



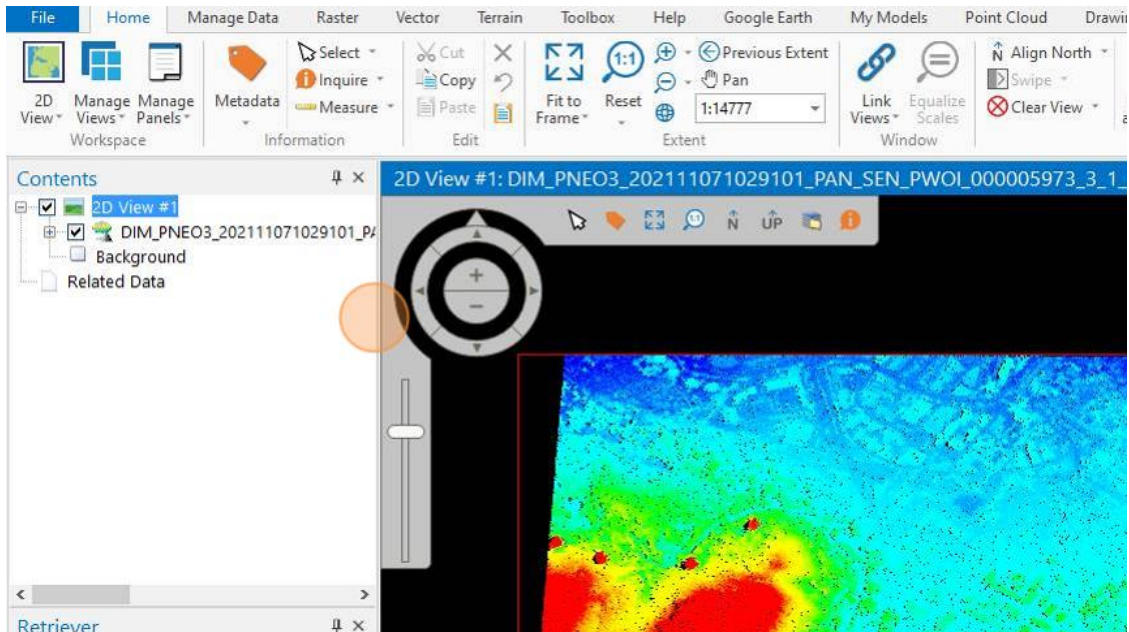
22. Click "OK"



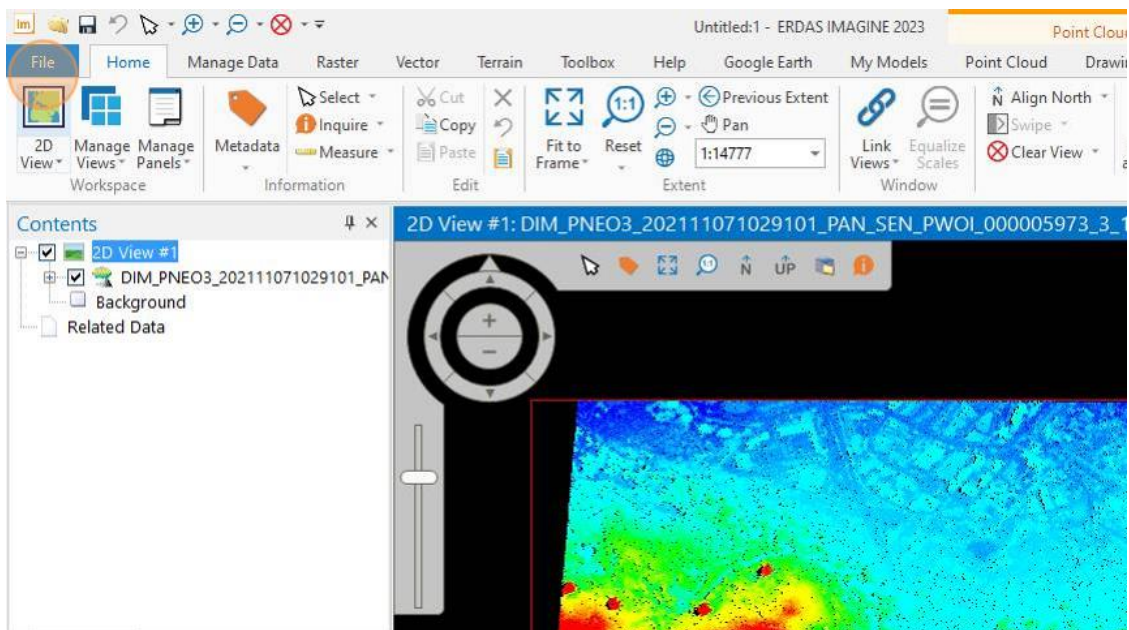
23. The point cloud layer will open in your 2D view.



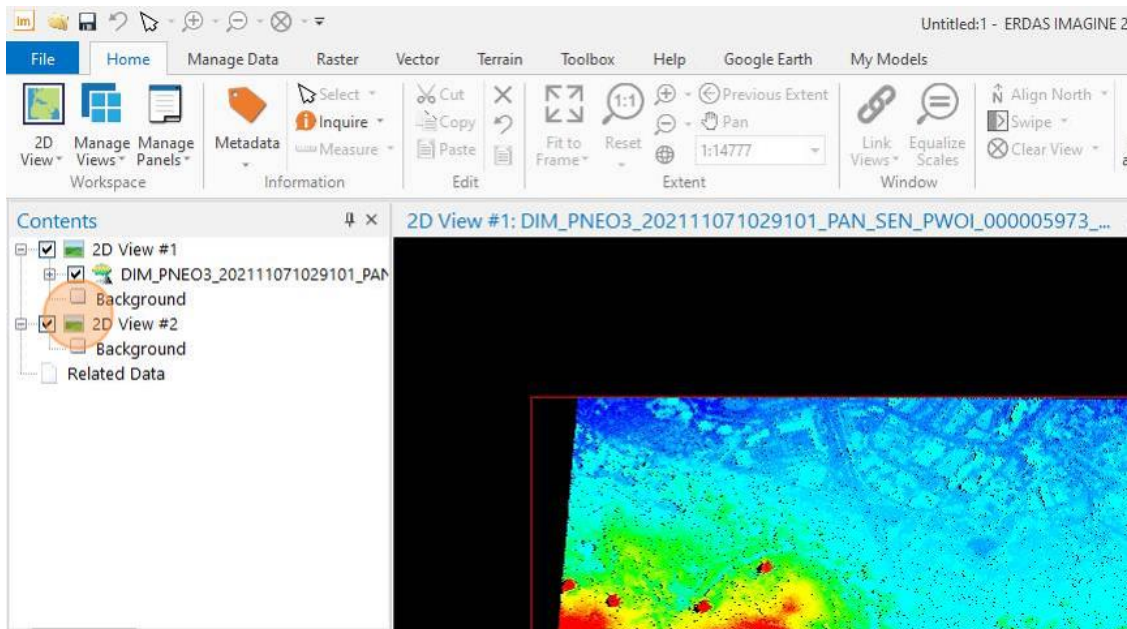
24. Now let's open a second point cloud in another view.



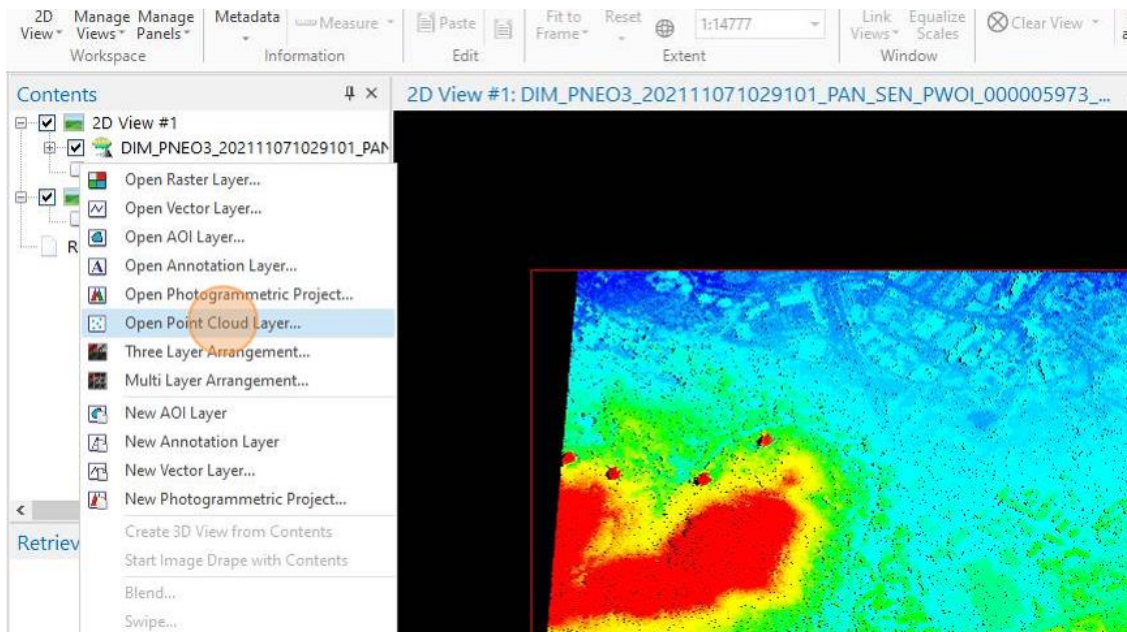
25. Click "File"



28. Now let's open the second point cloud. Right click on 2D View #2

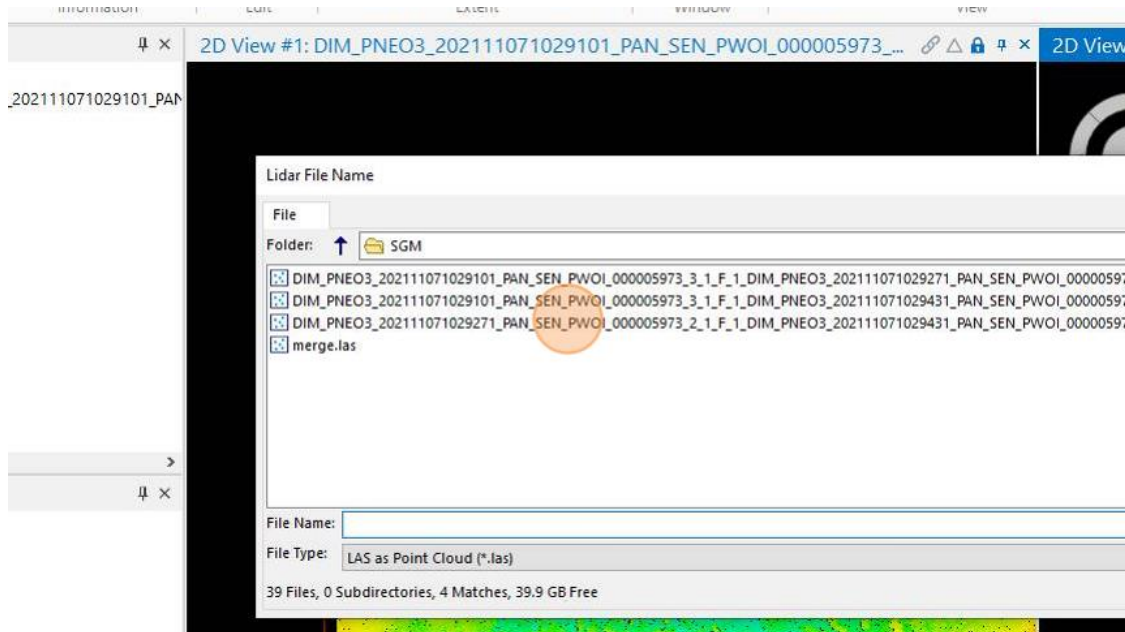


29. Click Open Point Cloud Layer

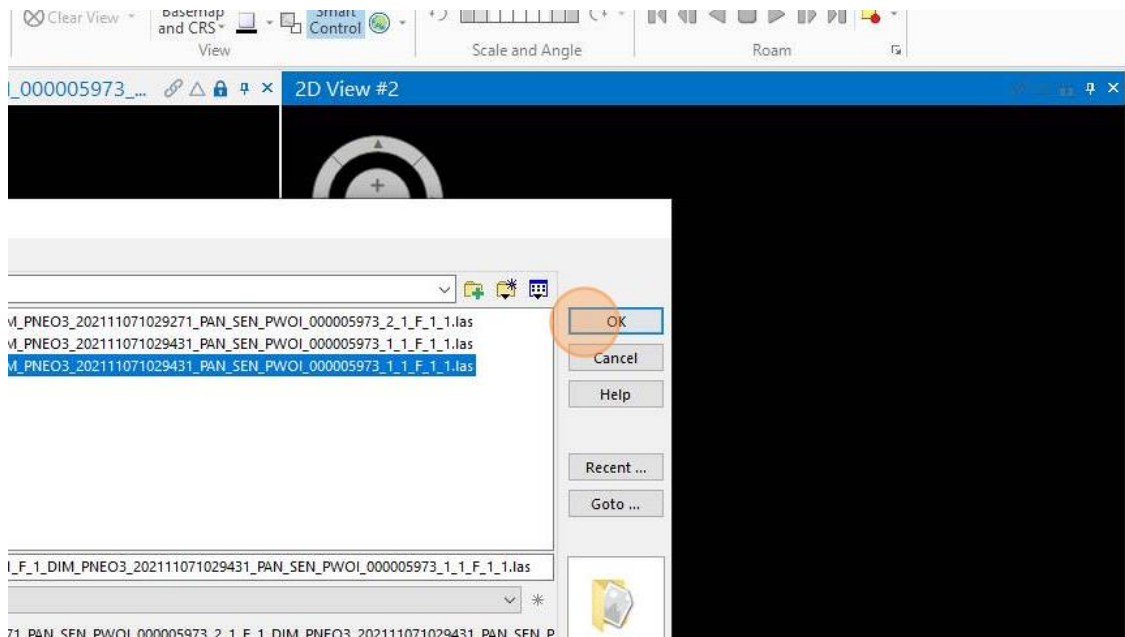


30. Select the second las file

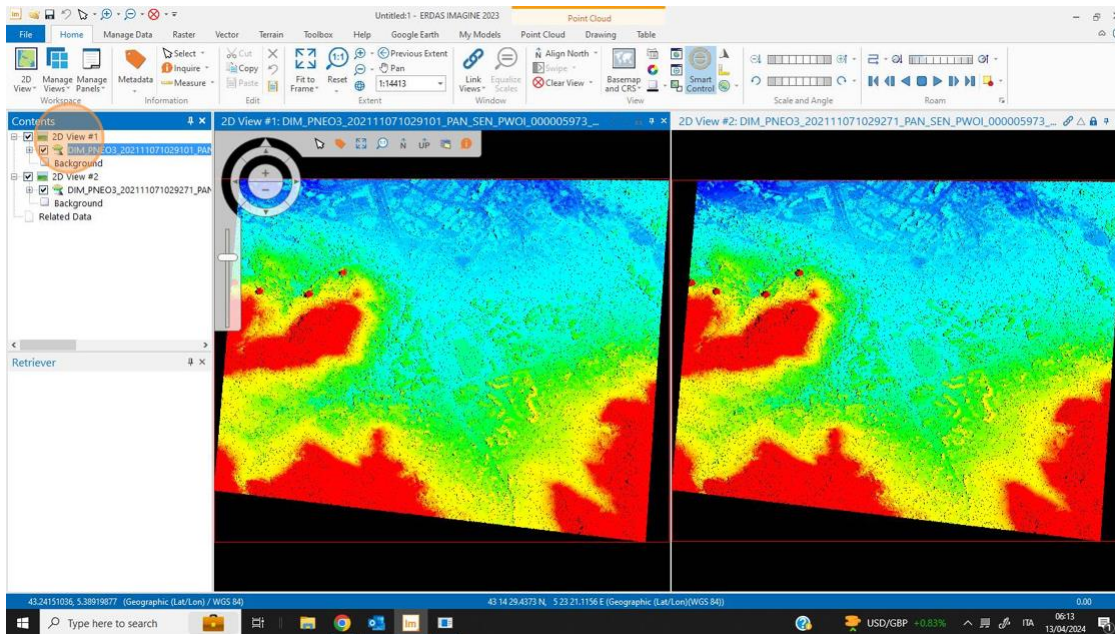
"DIM_PNEO3_202111071029271_PAN_SEN_PWOI_000005973_2_1_F_1_DIM_PNEO3_202111071029431_PAN_SEN_PWOI_000005973_1_1_F_1_1.las"



31. Click "OK"

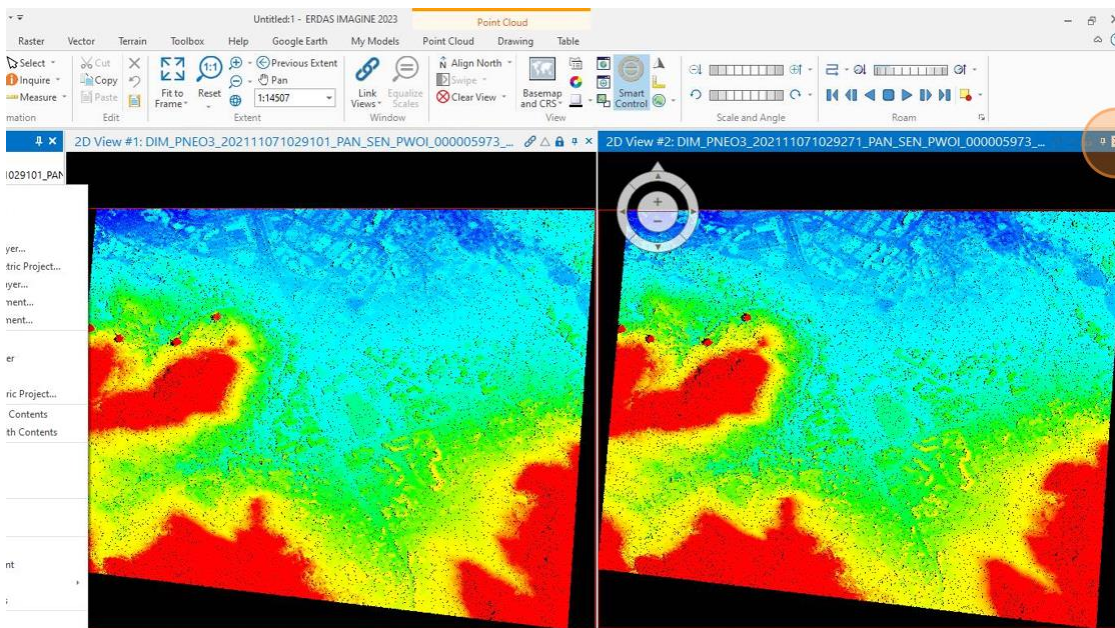


32. Here you can see the 2 different point cloud. Remember that we have 3 different files.

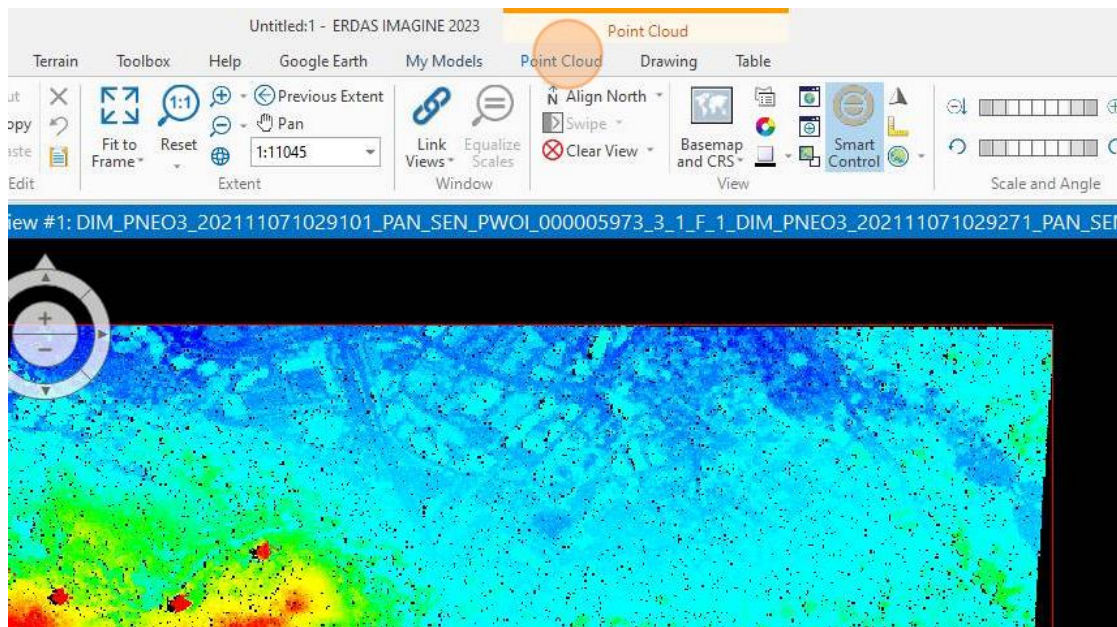


Merge LAS File

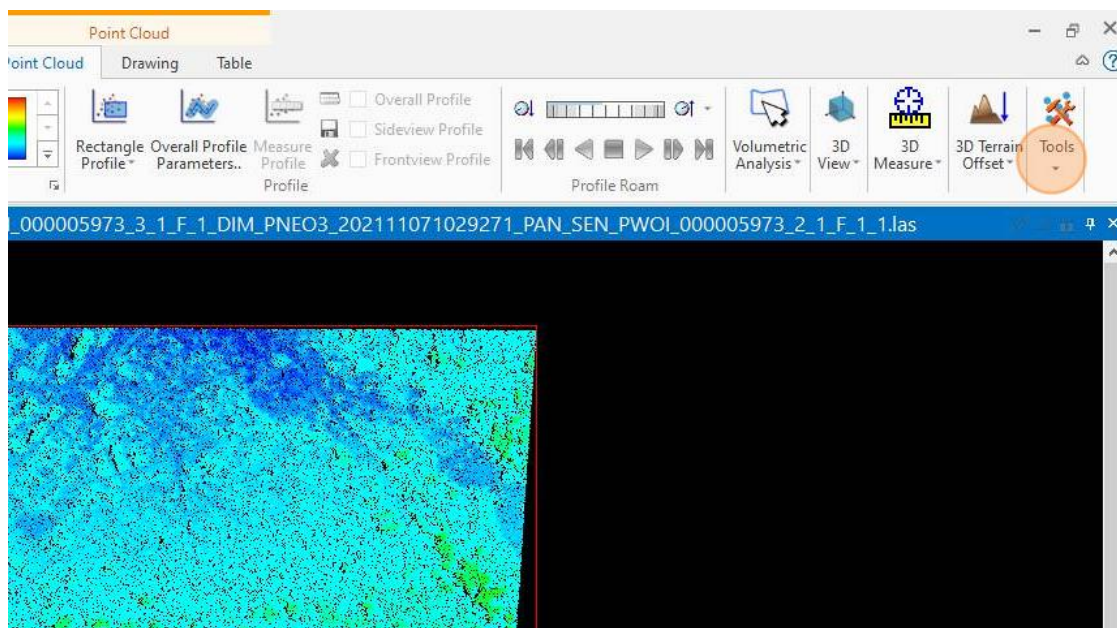
33. Close the second 2D view



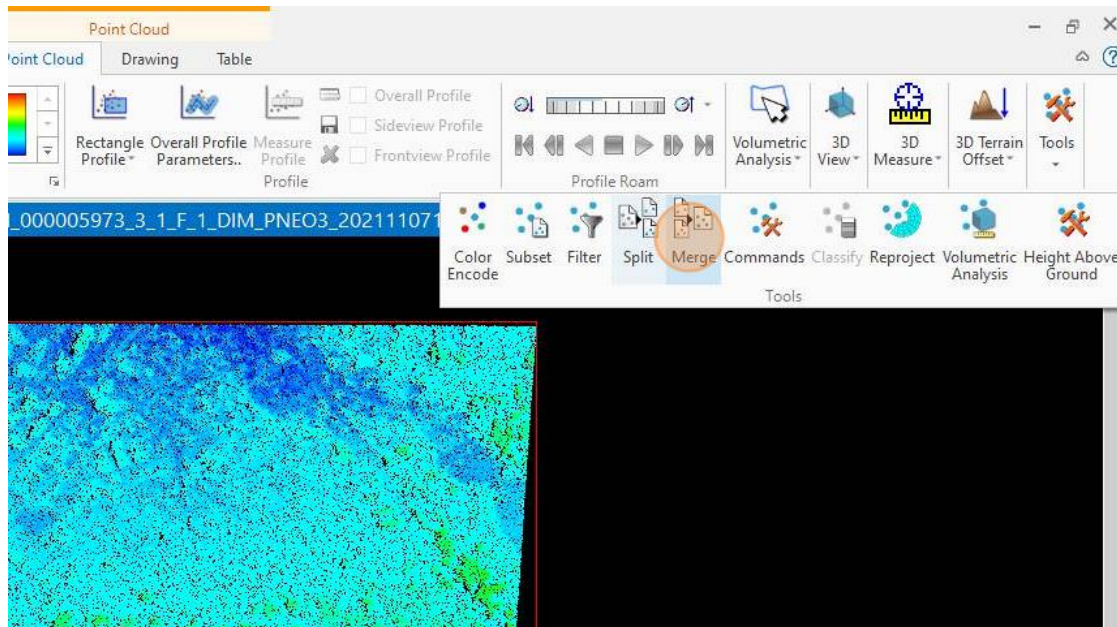
34. Now please go in the "Point Cloud" tab



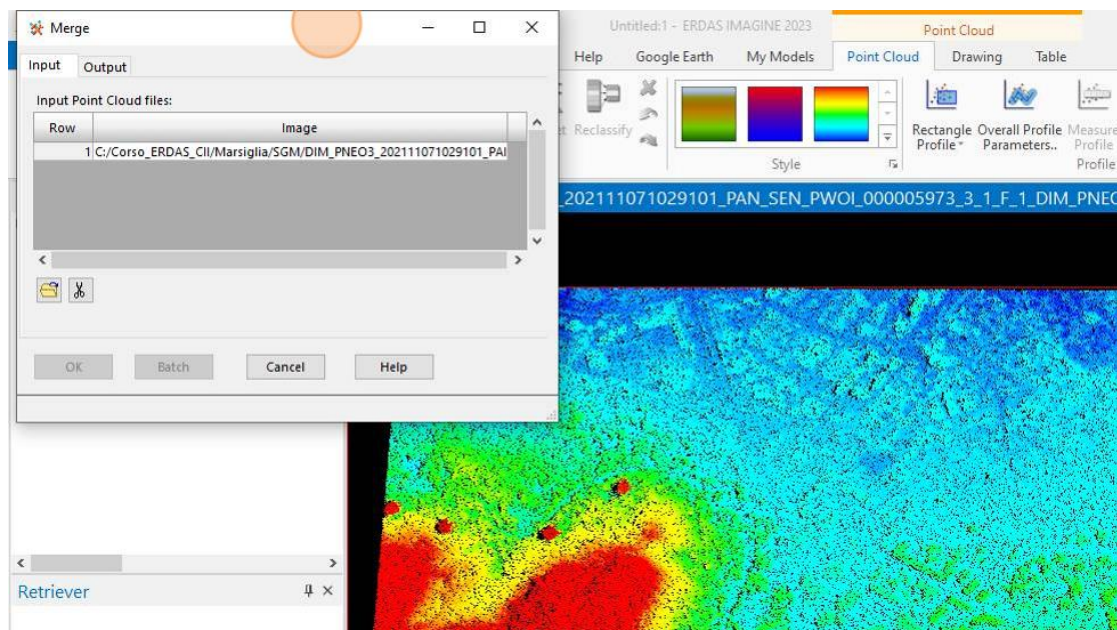
35. Click "Tools"



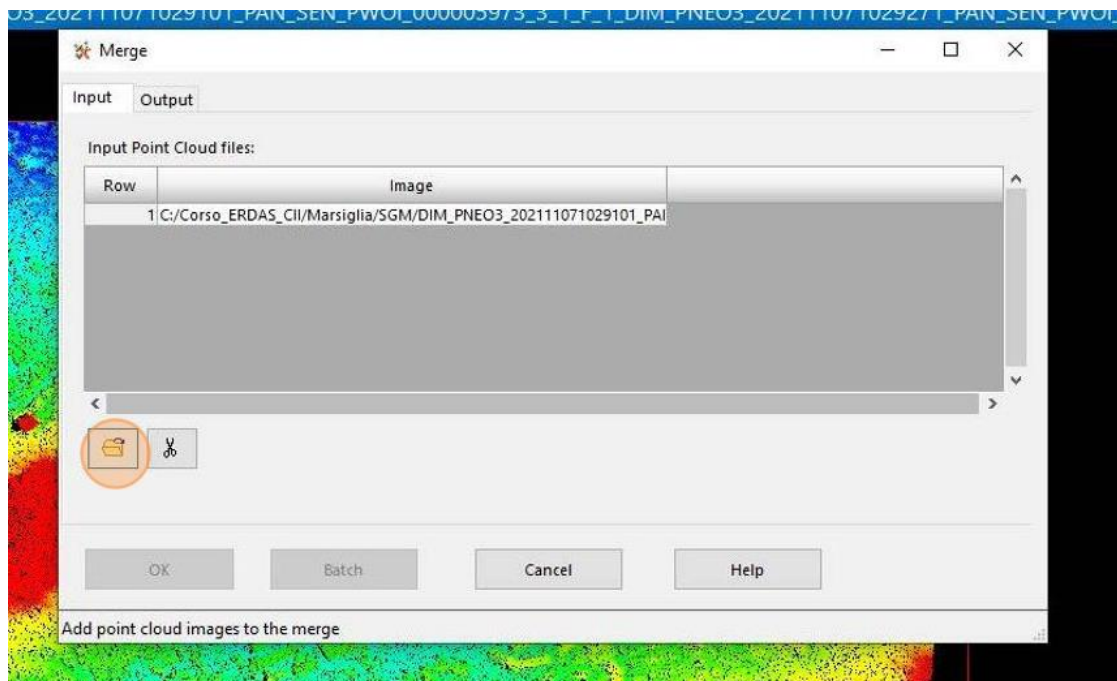
36. Click "Merge"



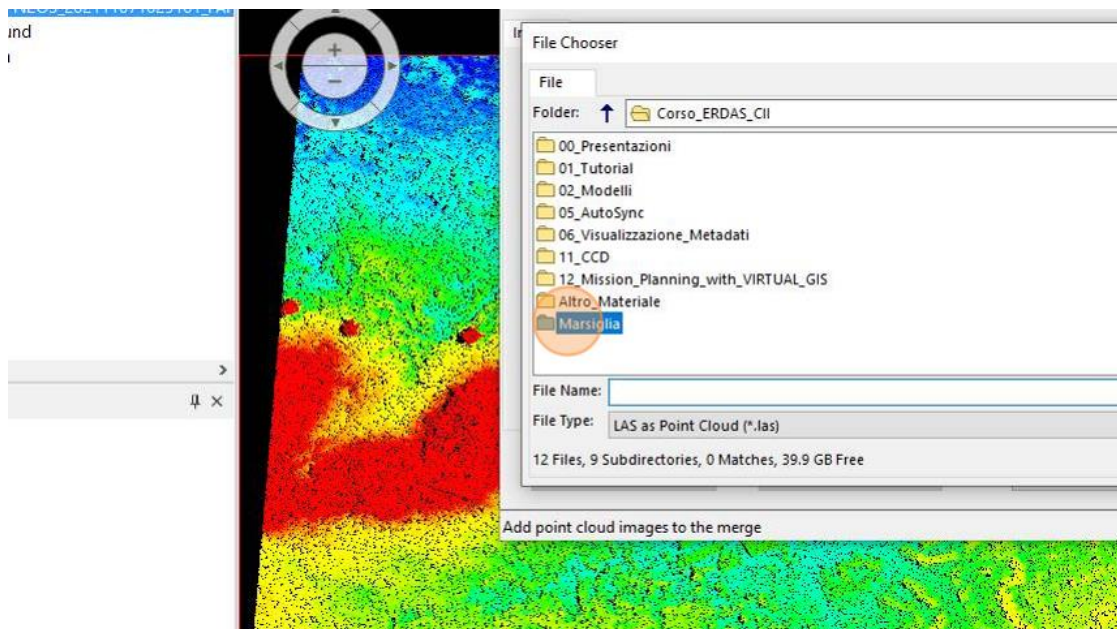
37. A window called "Merge" will open. Using this tool we can merge more point clouds together.



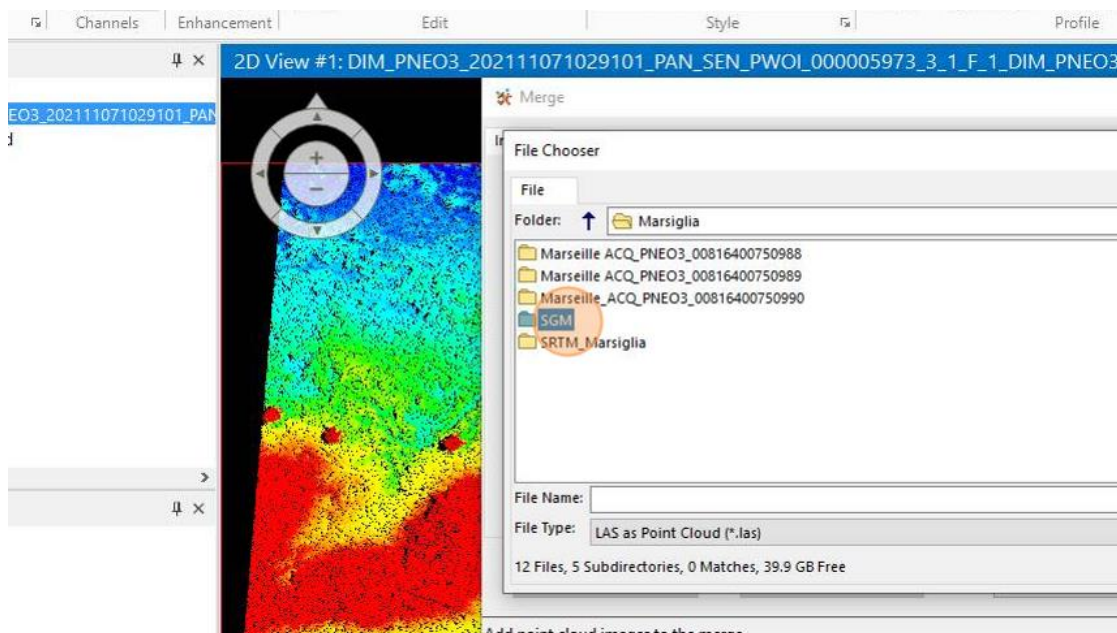
38. Click here to add the other 2 files:



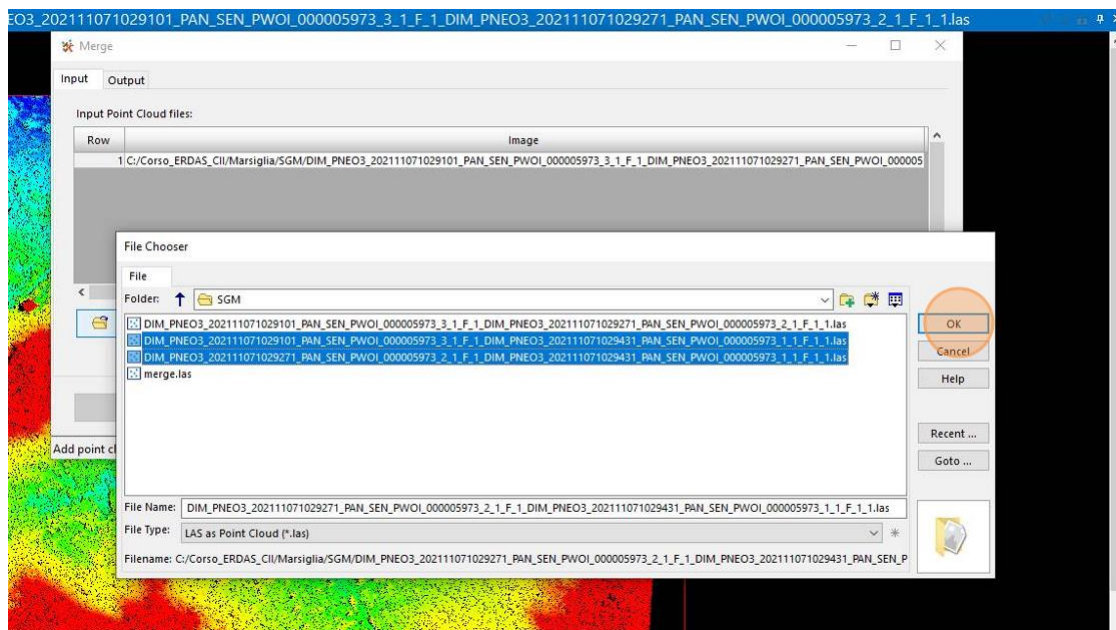
39. Go in the "Marsiglia" folder



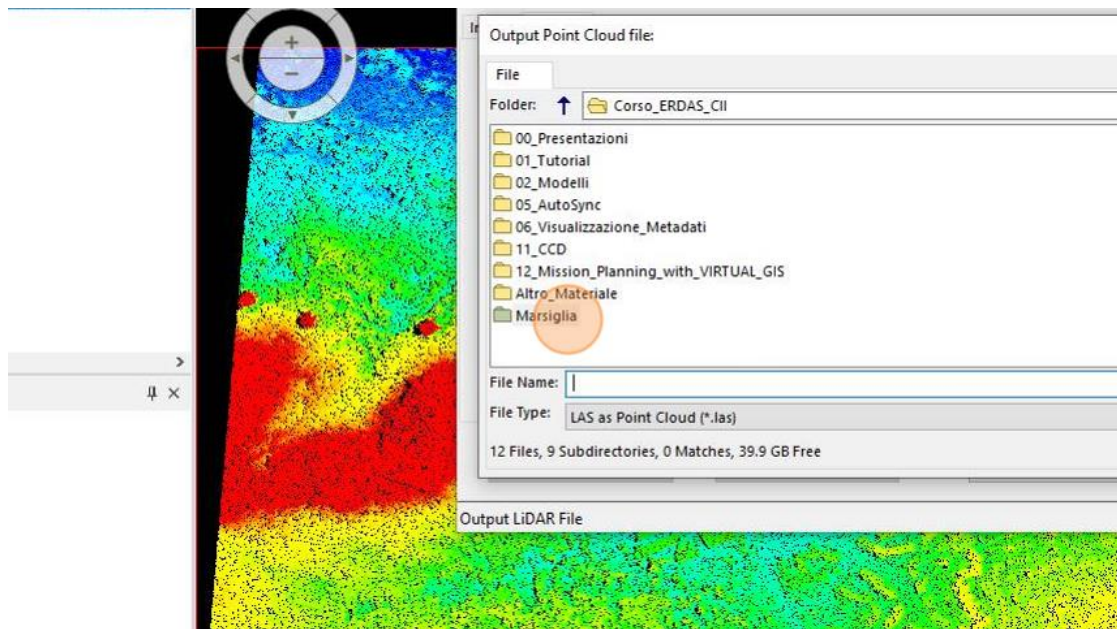
40. Click on SGM folder



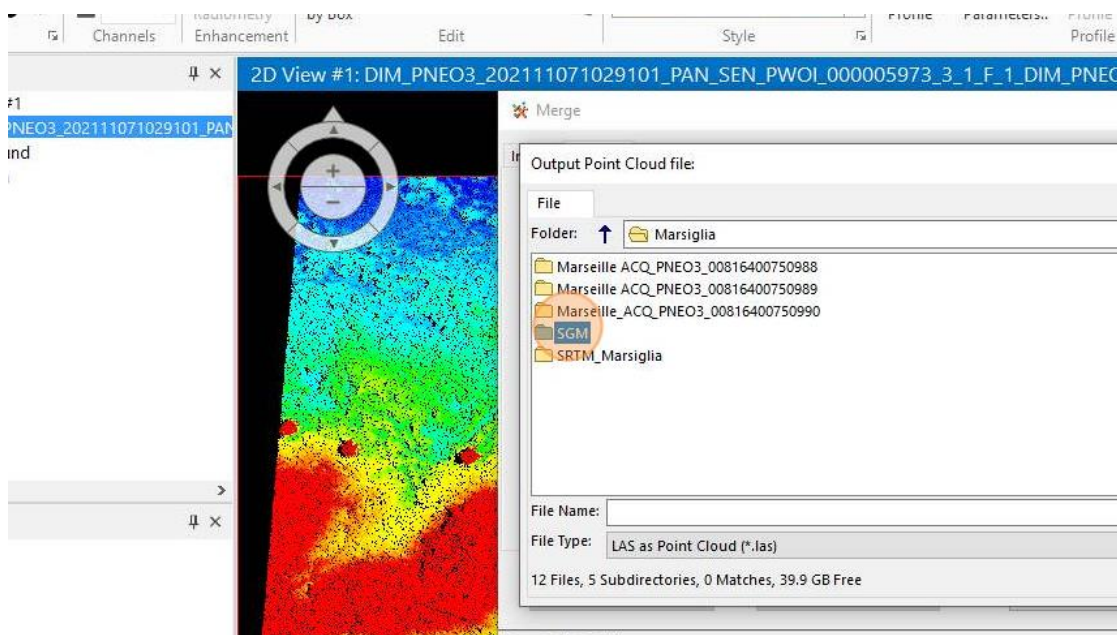
41. Select the other 2 point cloud and then click OK.



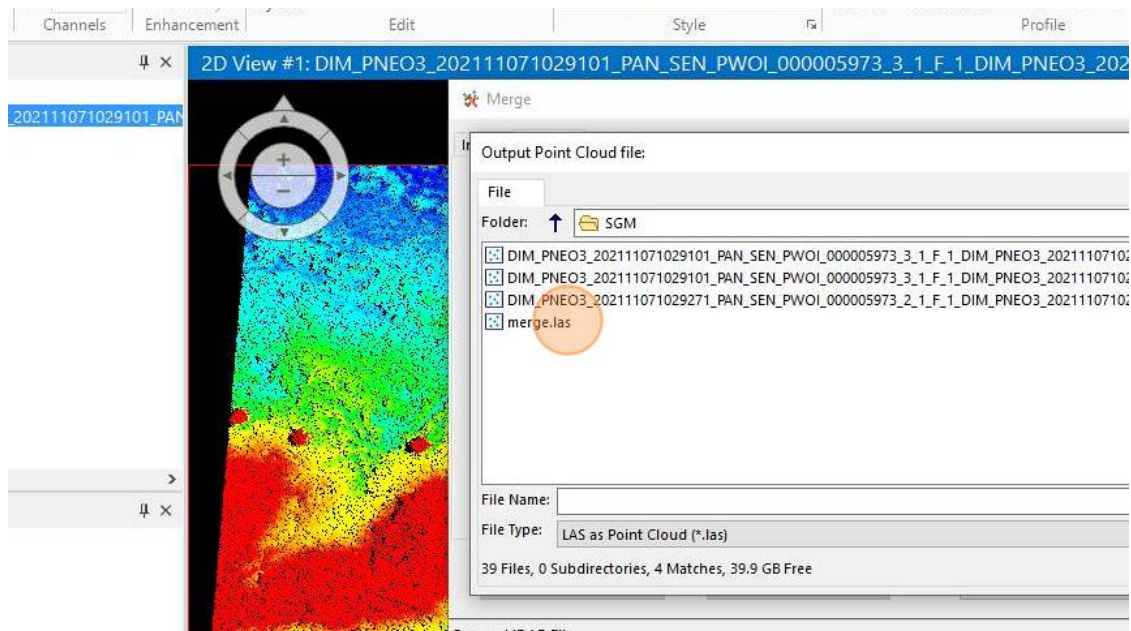
44. Saving it inside the Marsiglia folder



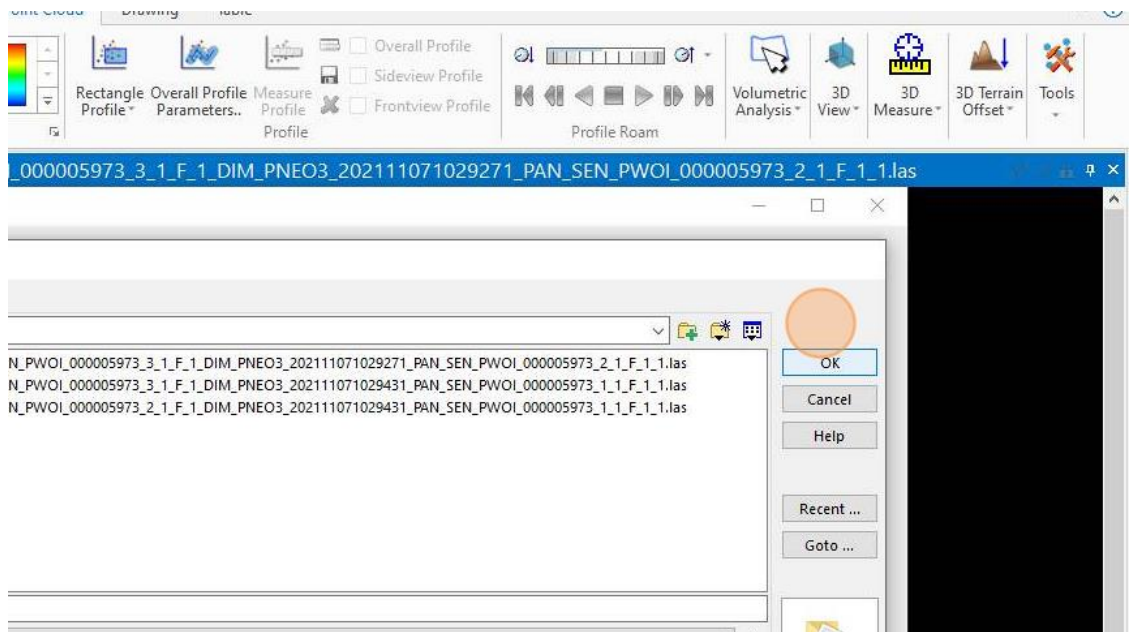
45. SGM folder



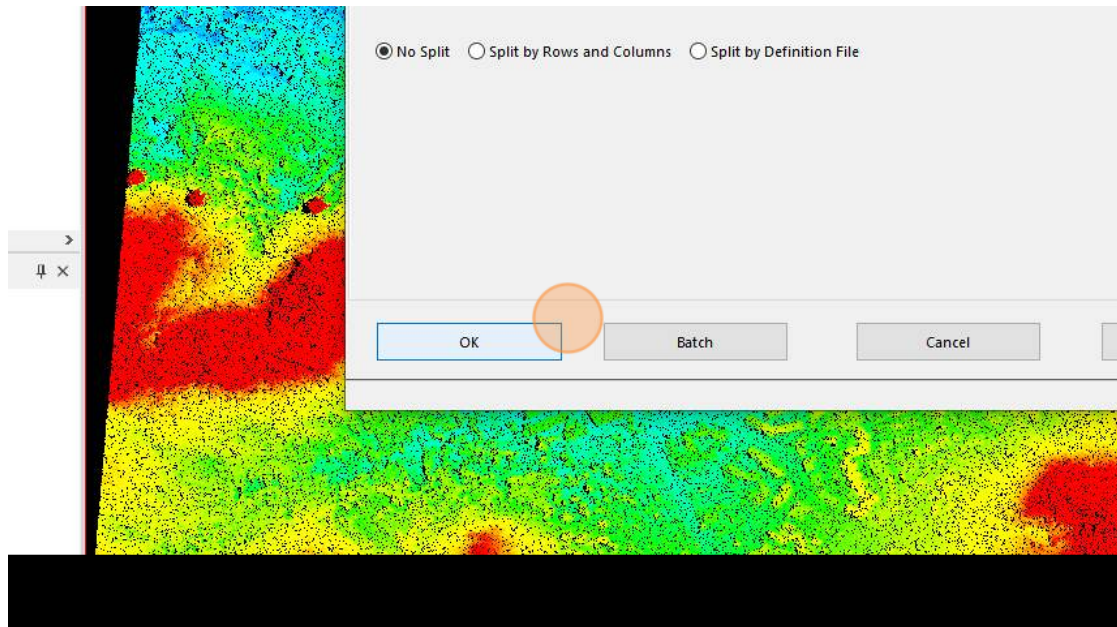
46. Name the output "merge.las"



47. Click "OK"

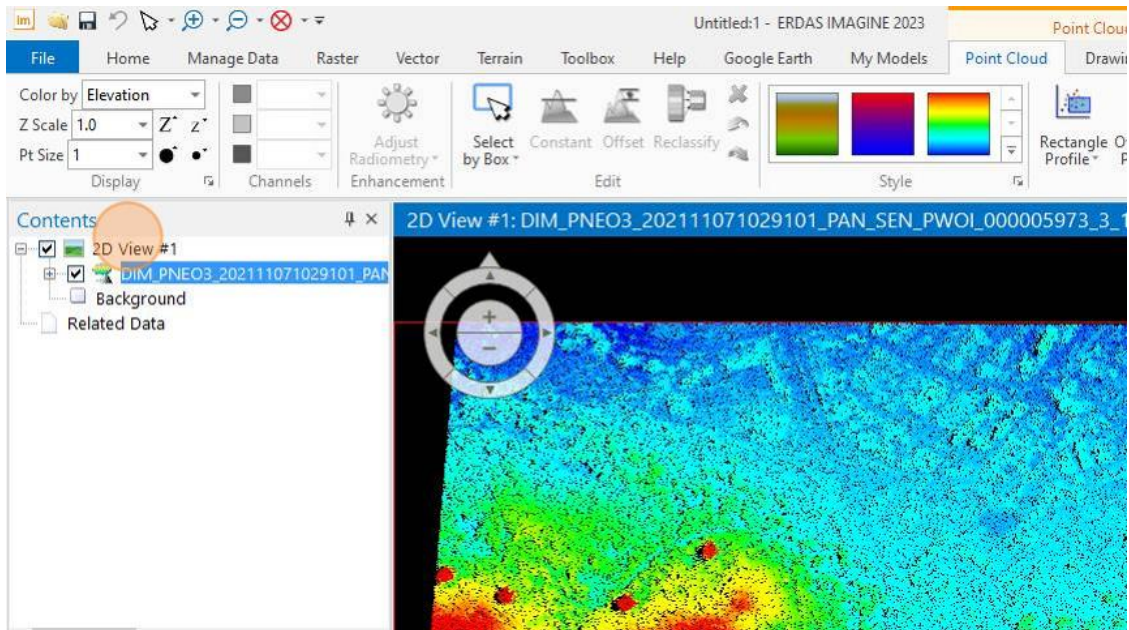


48. Click "OK"

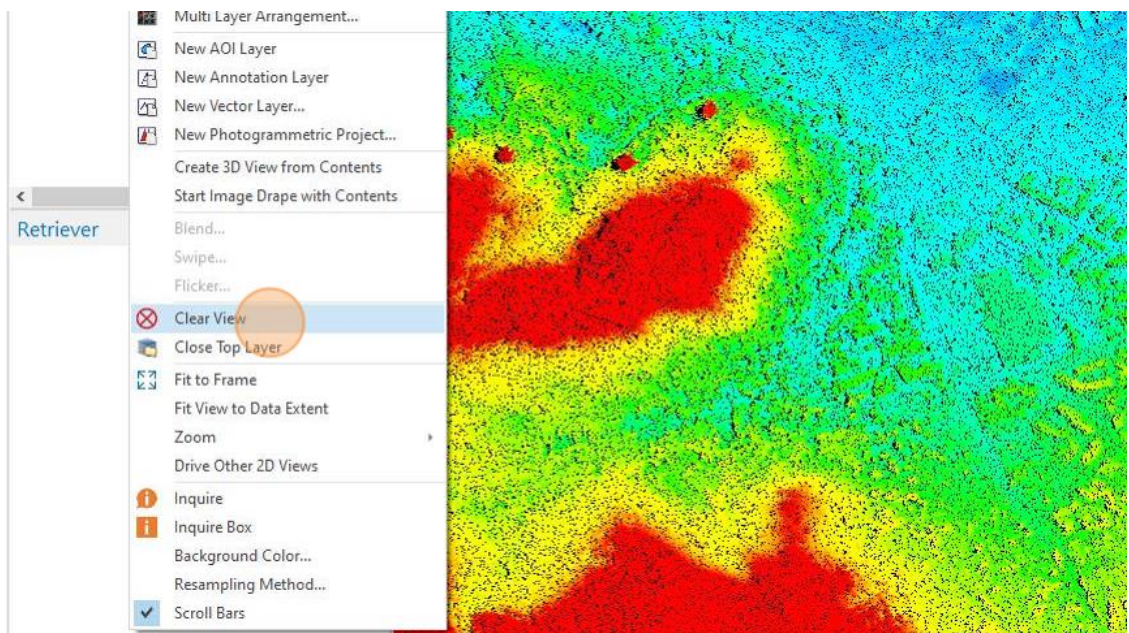


Merged point cloud analysis

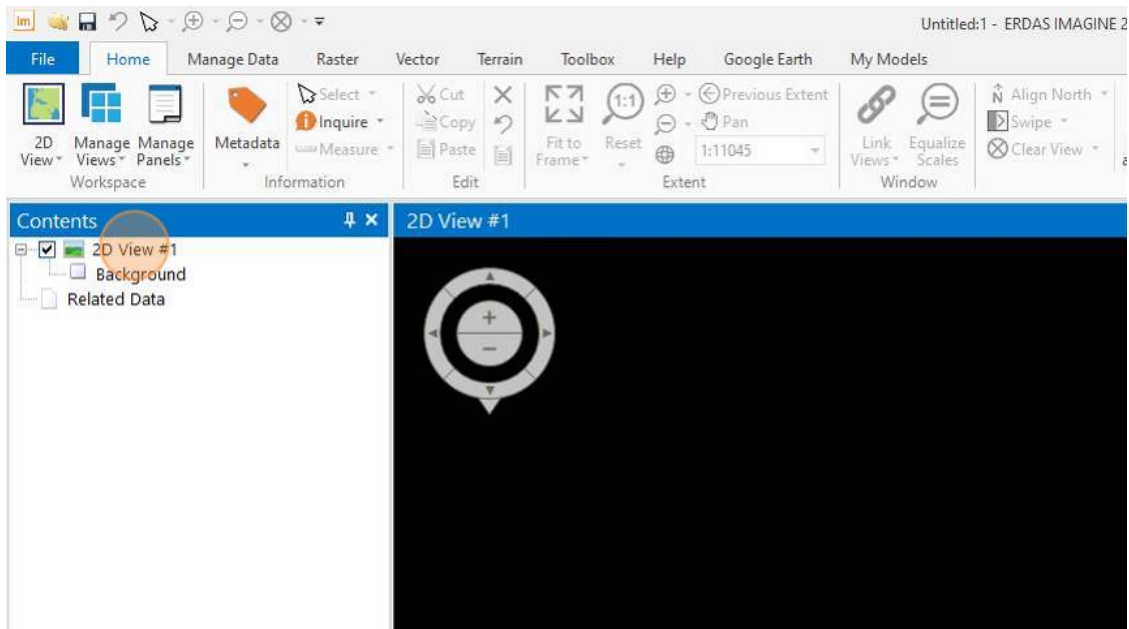
49. Right-click here:



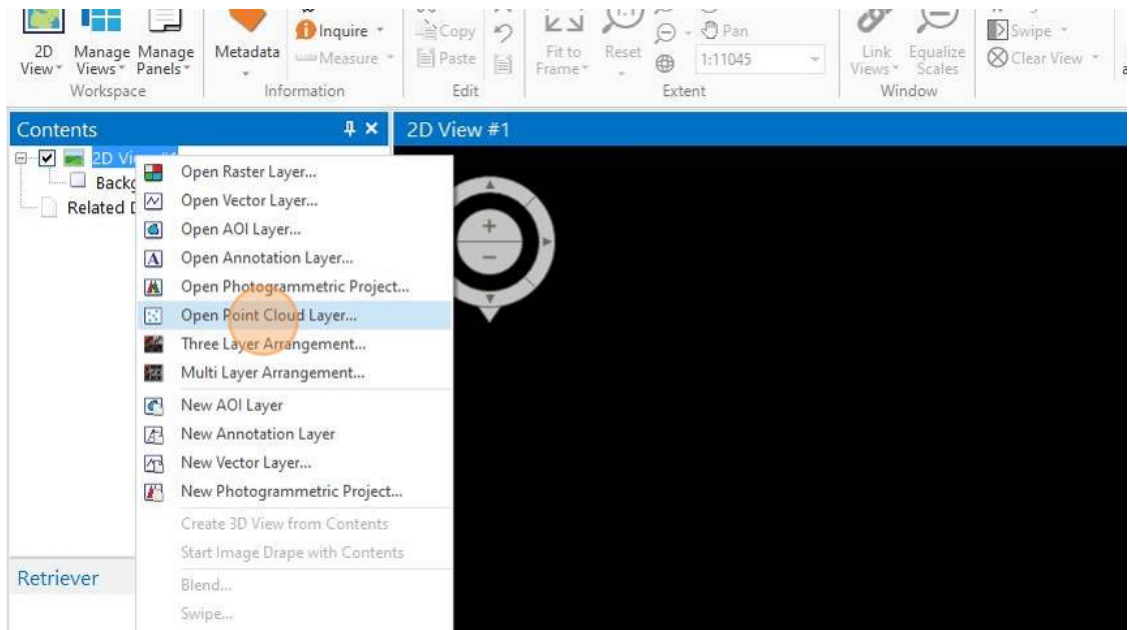
50. Click "Clear view"



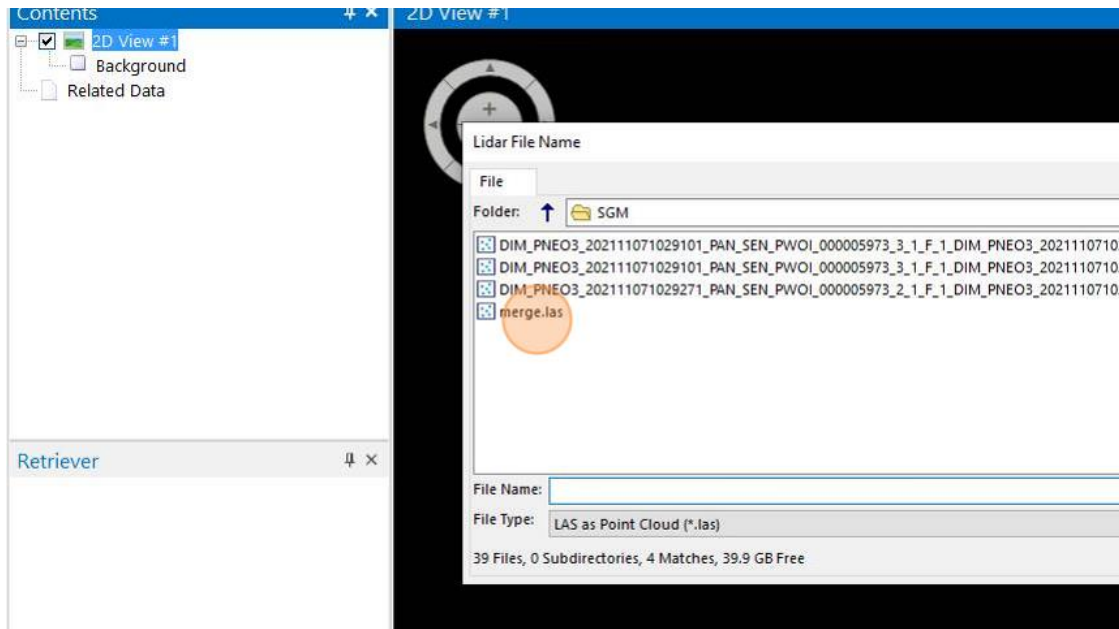
51. Right-click here to open the merged file



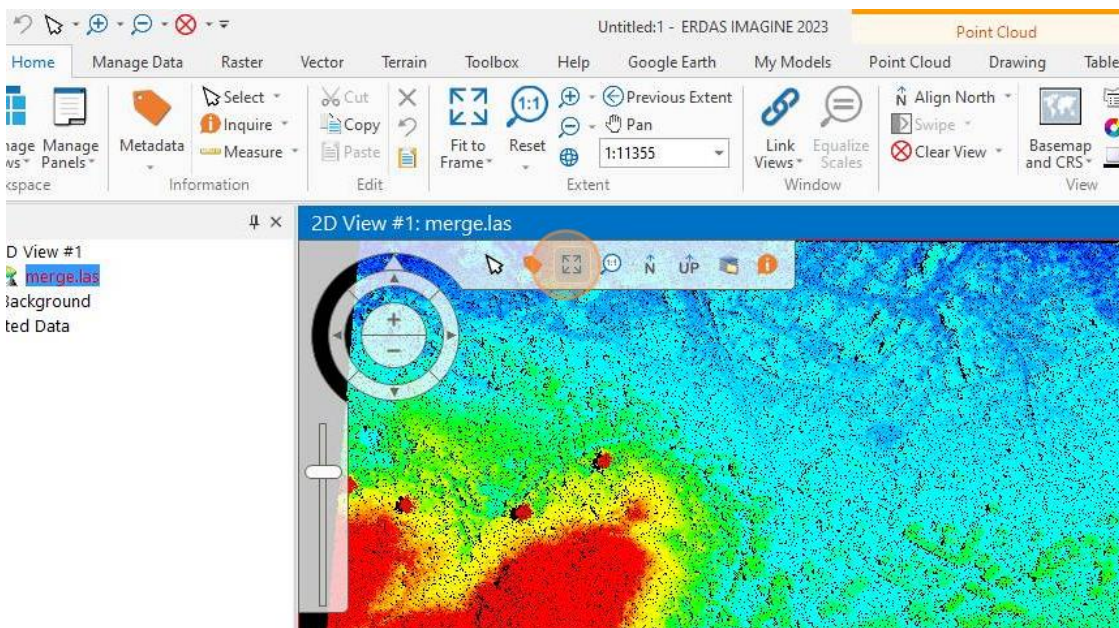
52. Click "Open Point Cloud Layer"



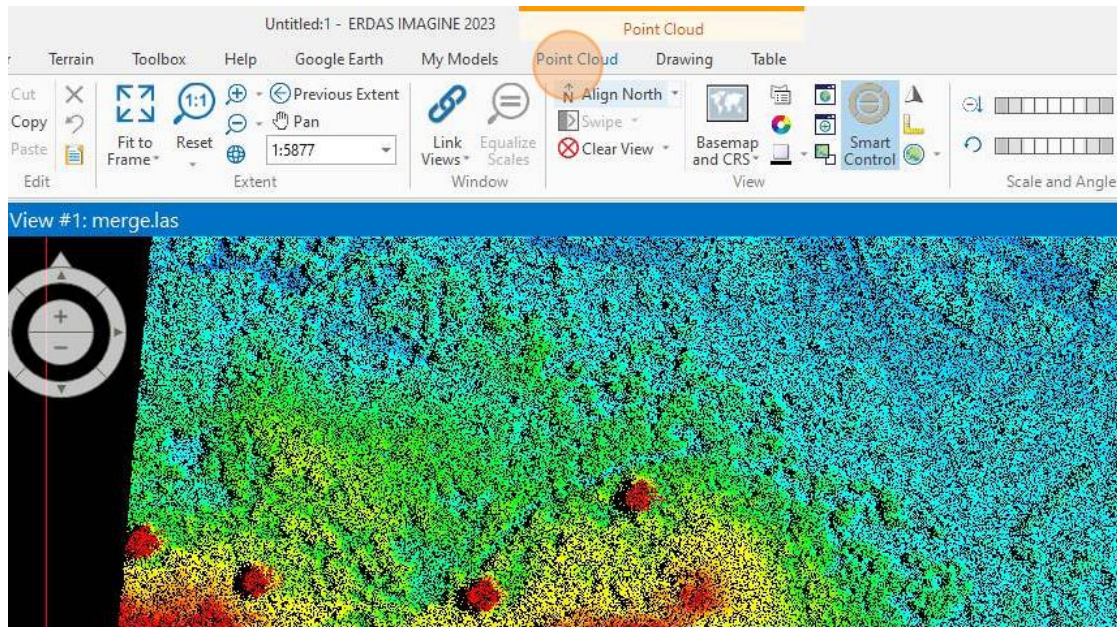
53. Select the merge.las file and then click ok.



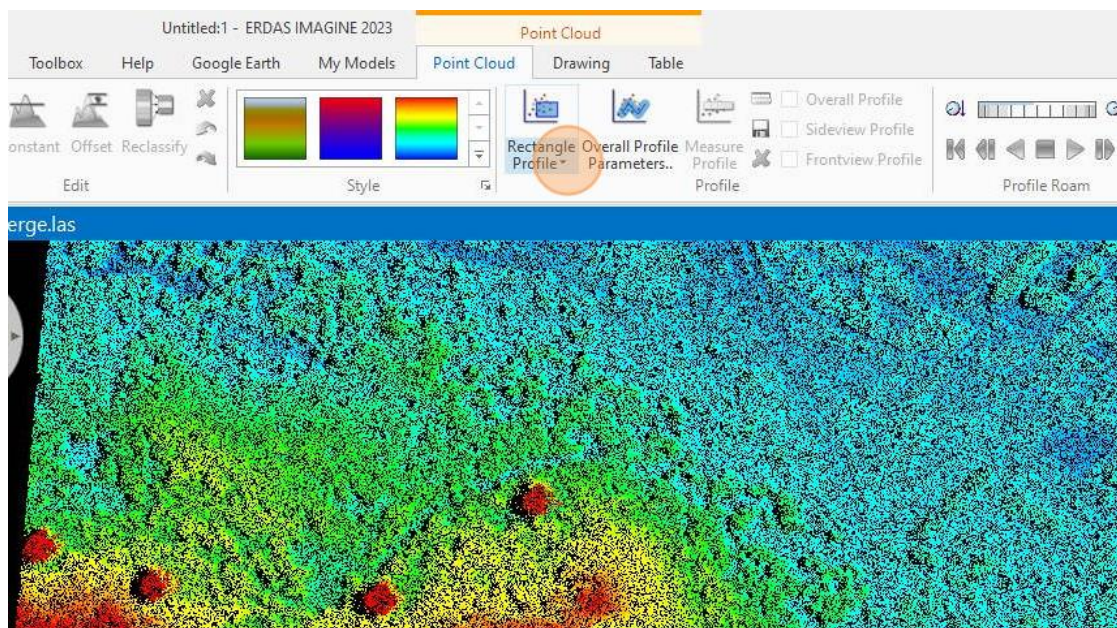
54. This is the merged las file.



55. Now click on the "Point Cloud" toolbar

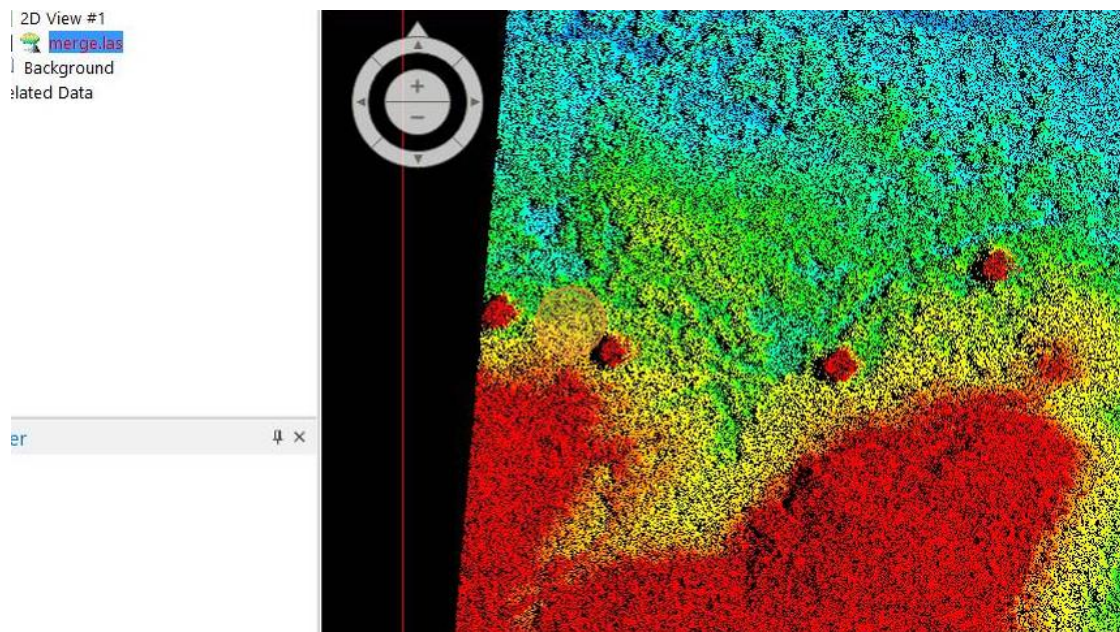


56. Click "Rectangle Profile"

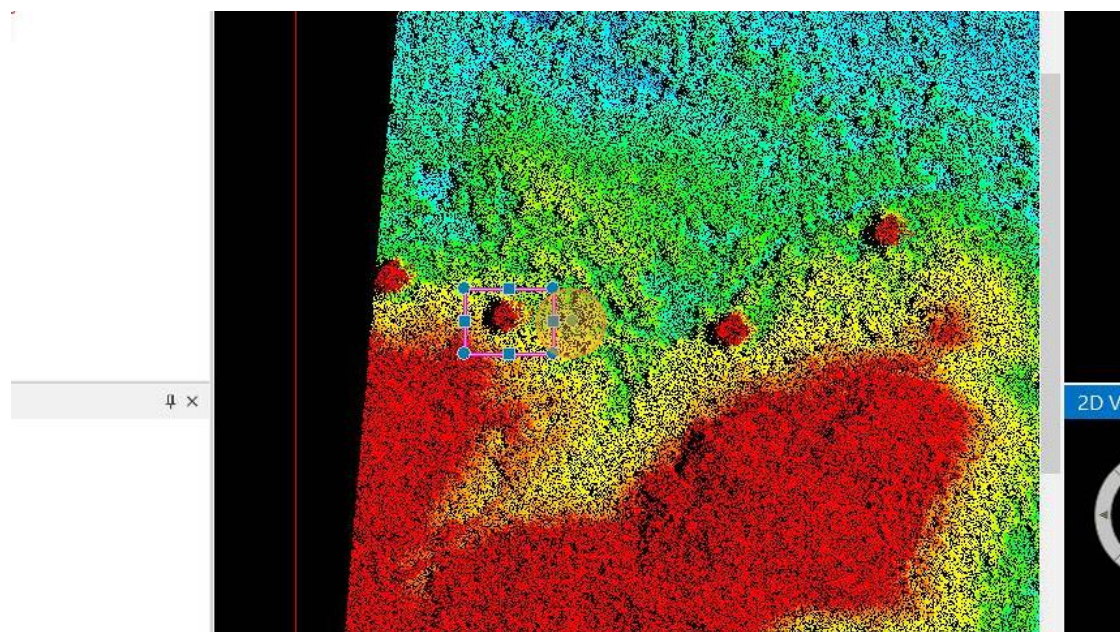


57. Click "Rectangle Profile"

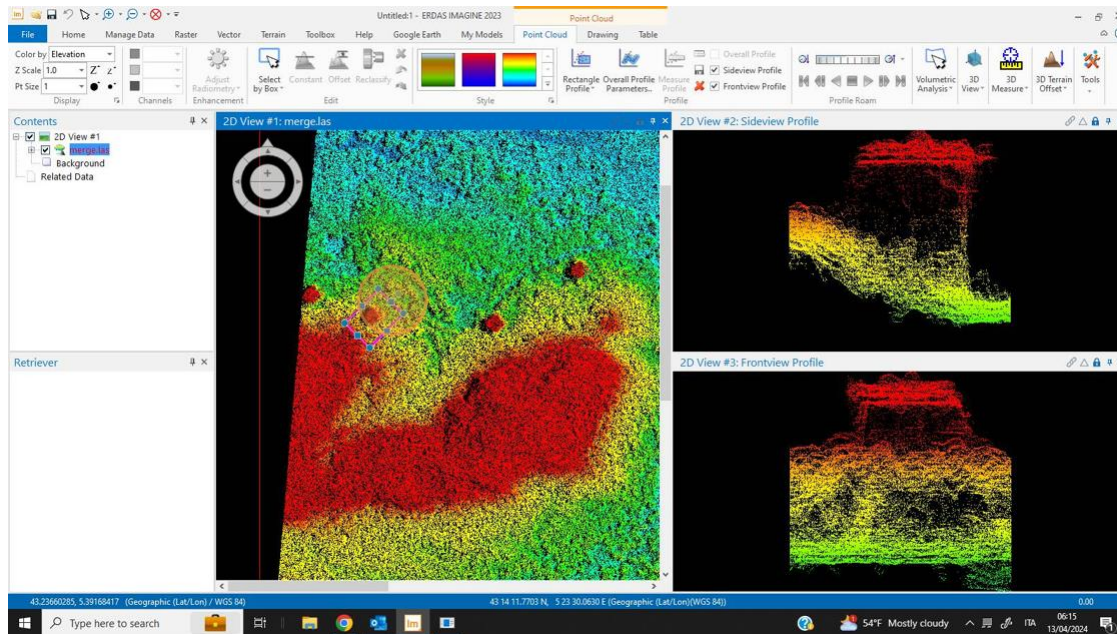
58. Create a rectangle profile around this building



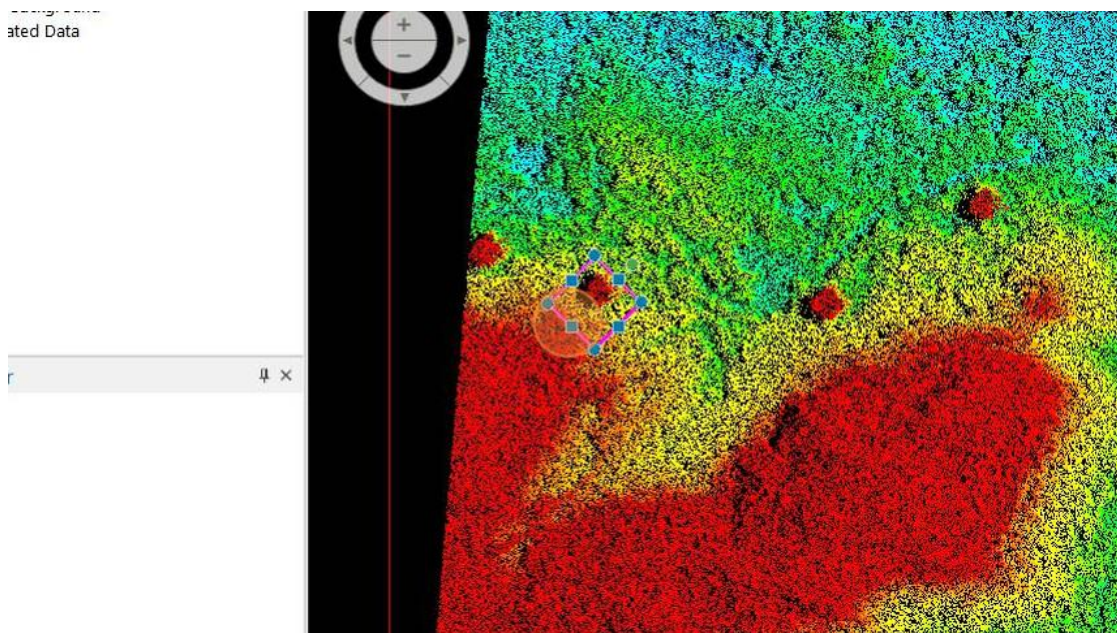
59. Like this



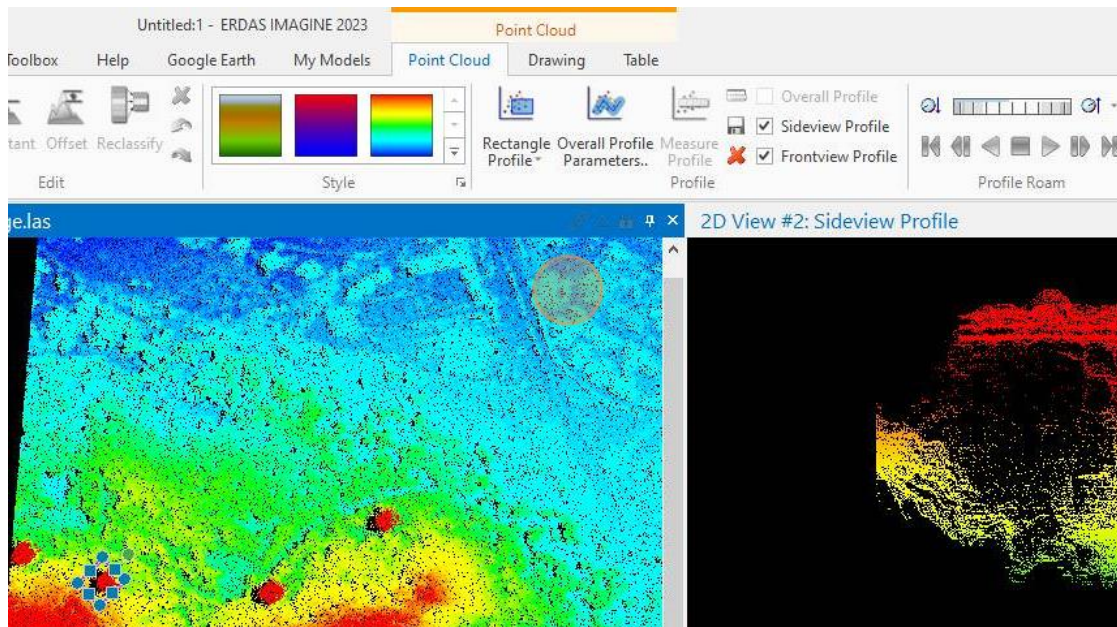
60. The side view and front view profile will show.



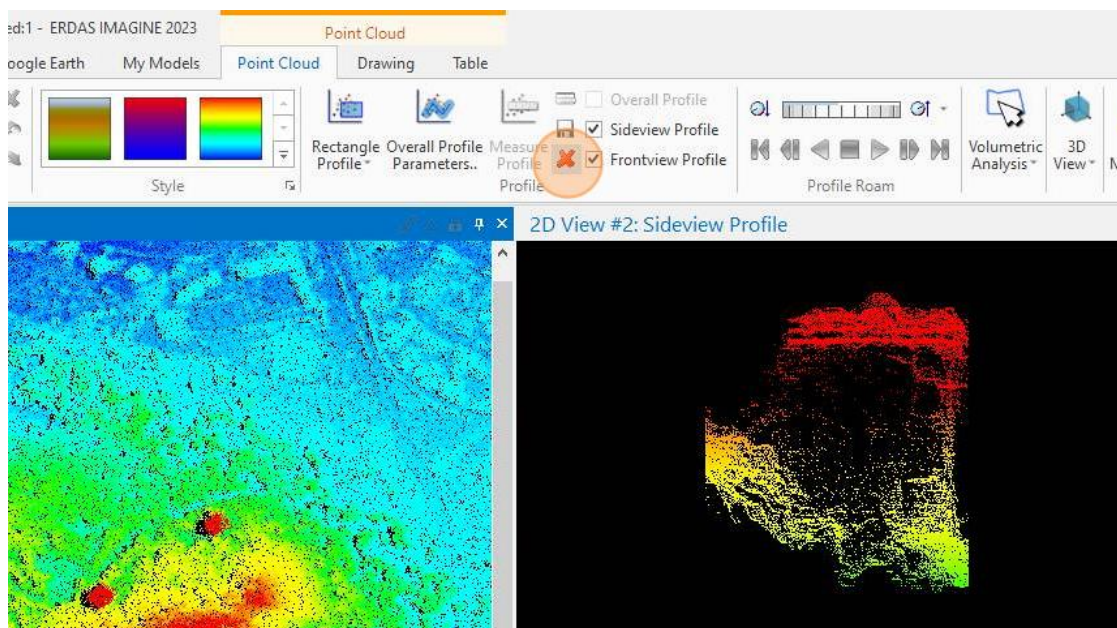
61. You can move the rectangle profile or rotate it to change the point of view.



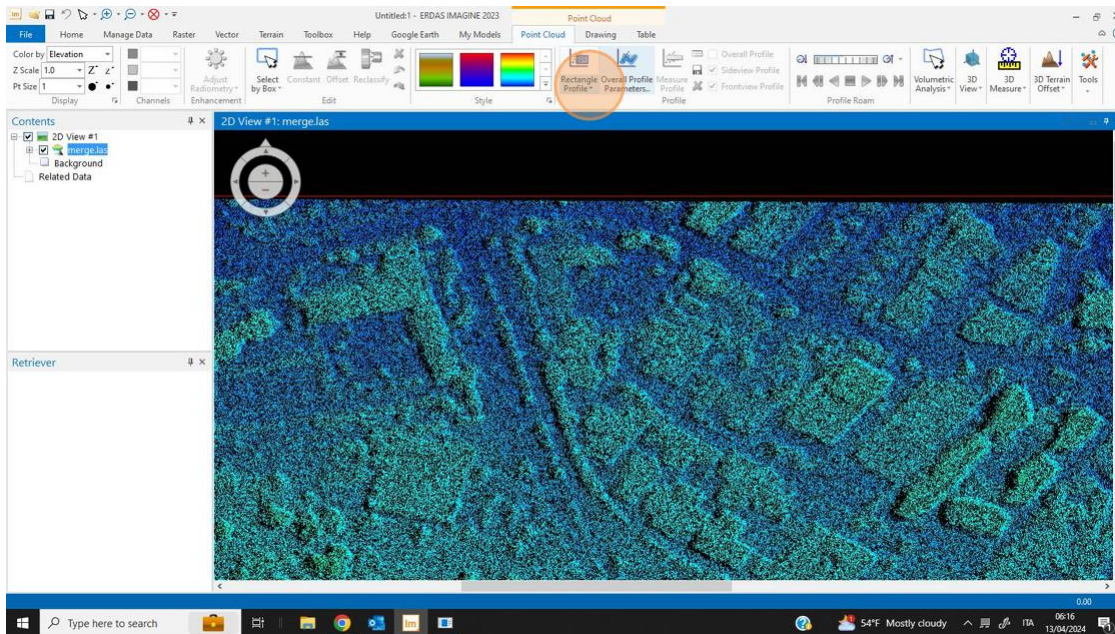
62. To close the profile views, please click on the main view (where the point cloud is) to activate it.



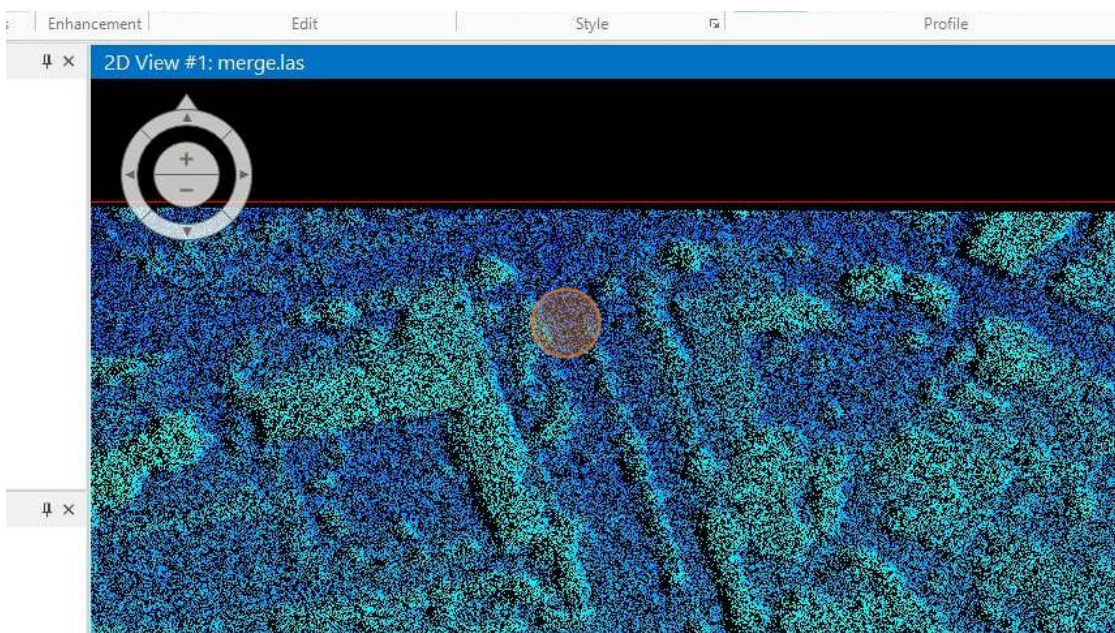
63. Then click on this red cross.



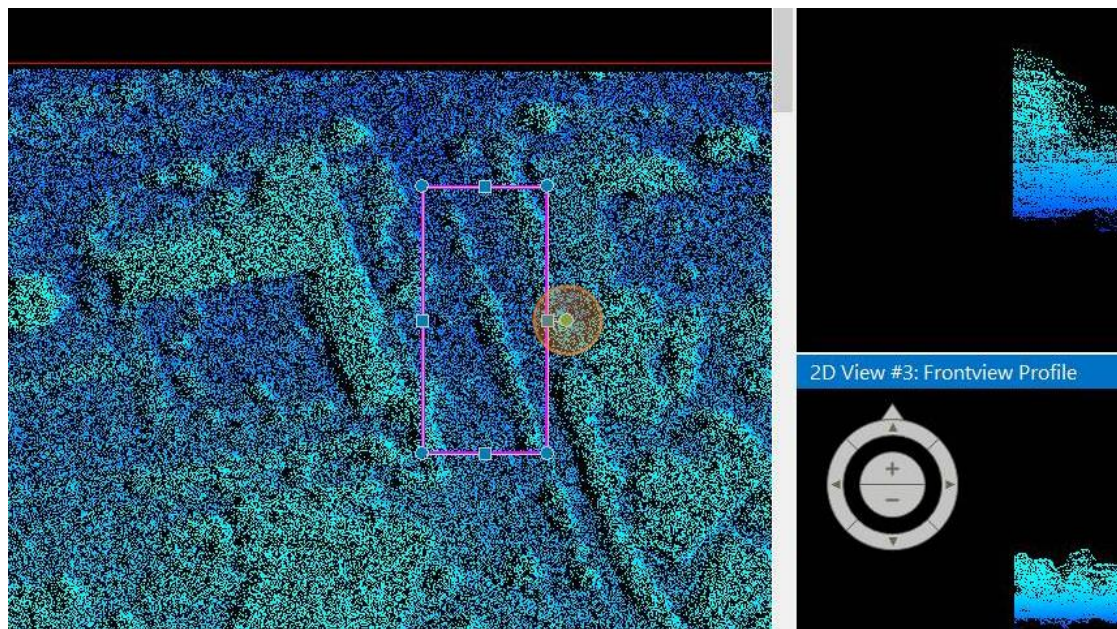
64. Now the rectangle profile of the building is closed, let's create another profile.



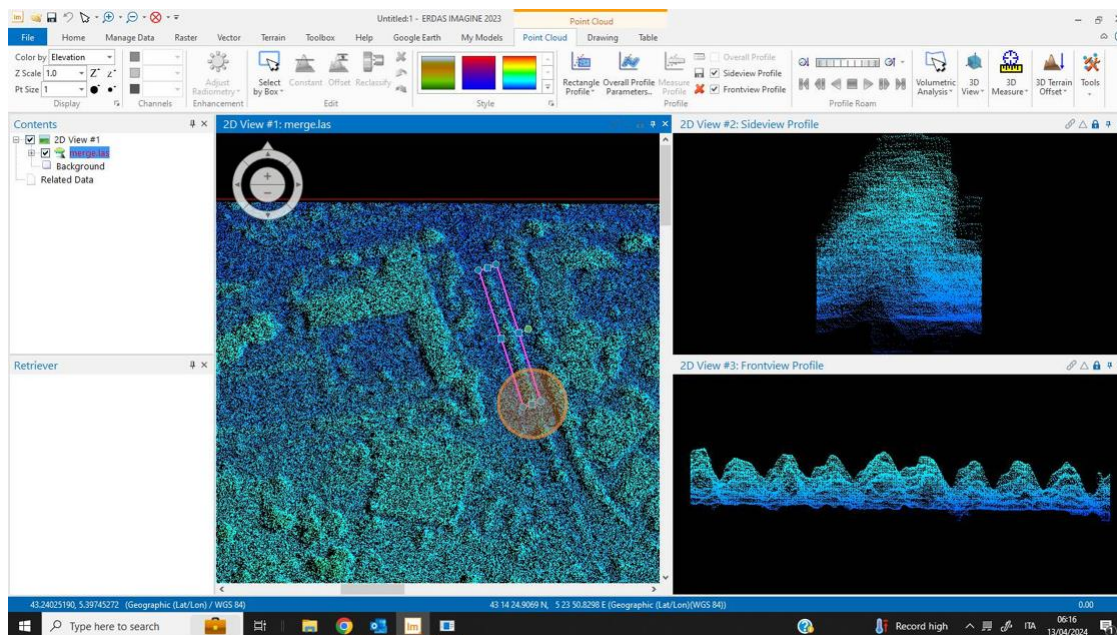
65. Create a rectangle profile around this trees:



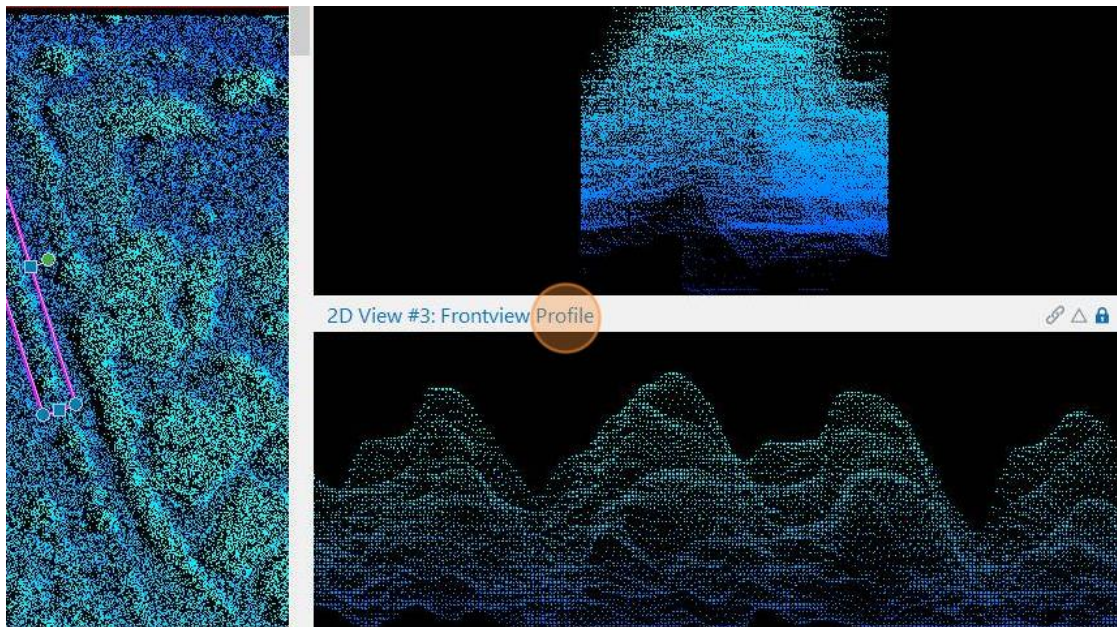
66. Click her to rotate it.



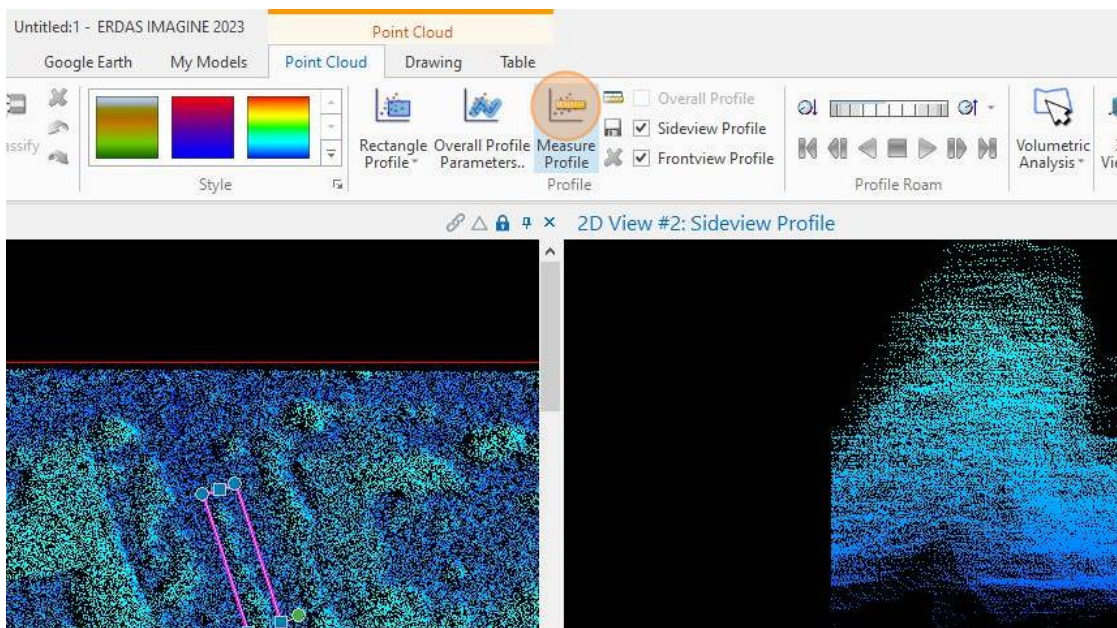
67. Once you see the profiles in this way



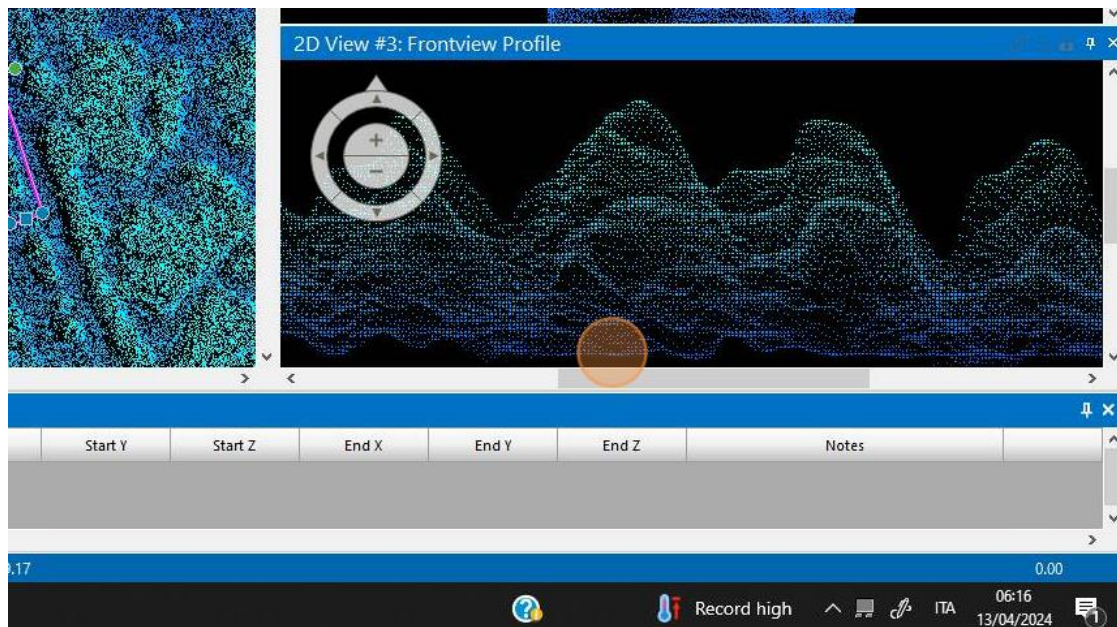
68. Click "2D View #3: Frontview Profile" to activate it



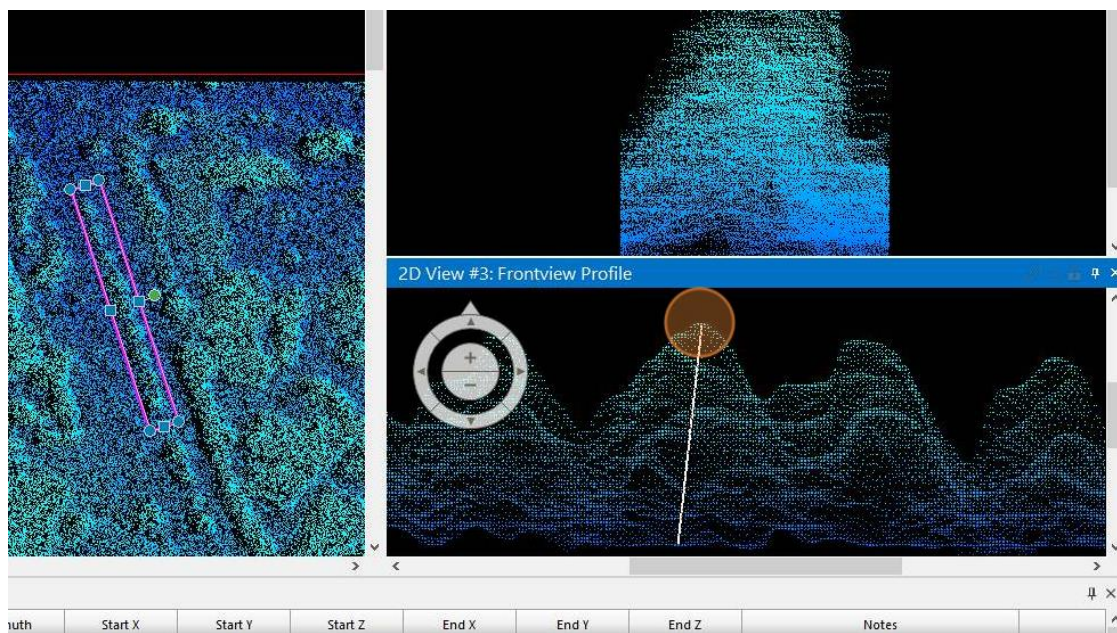
69. Now click on "Measure Profile"



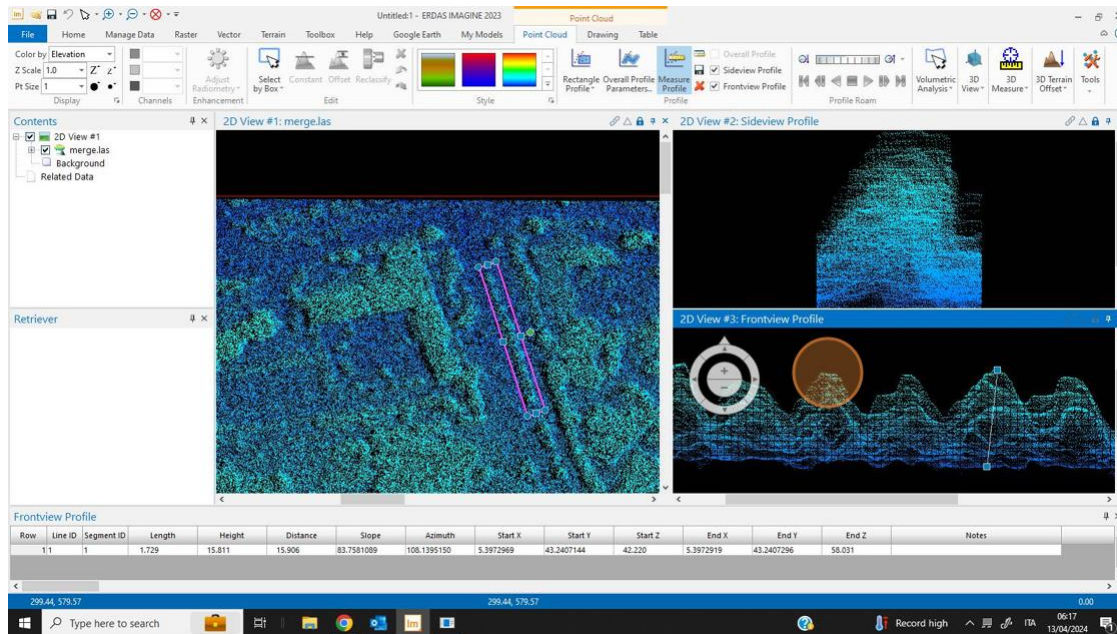
70. Click "here"



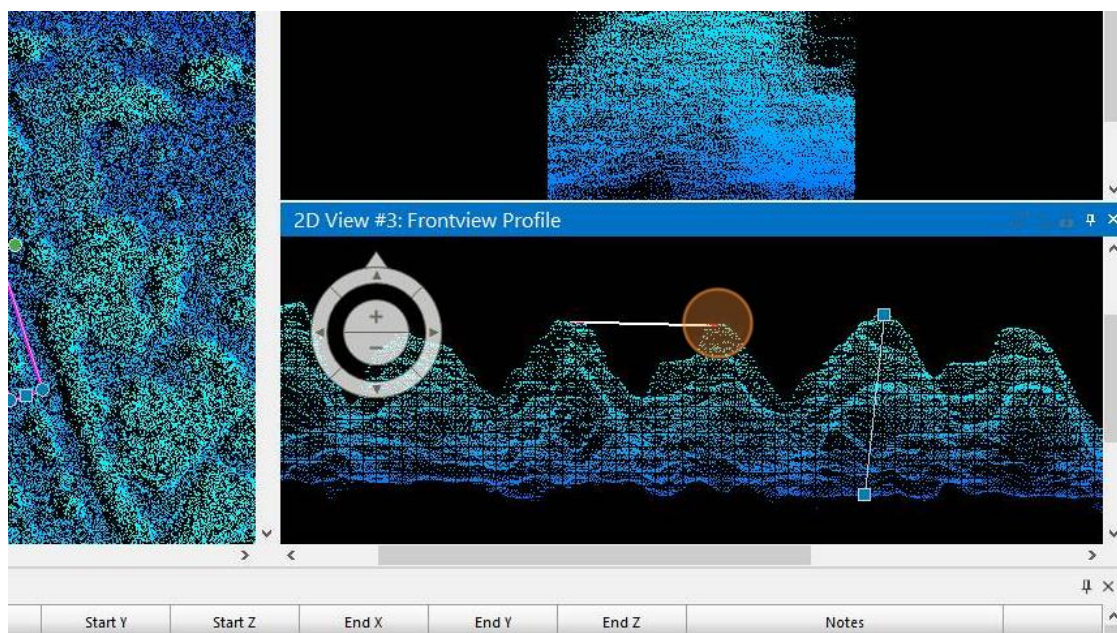
71. Then on the top of the tree



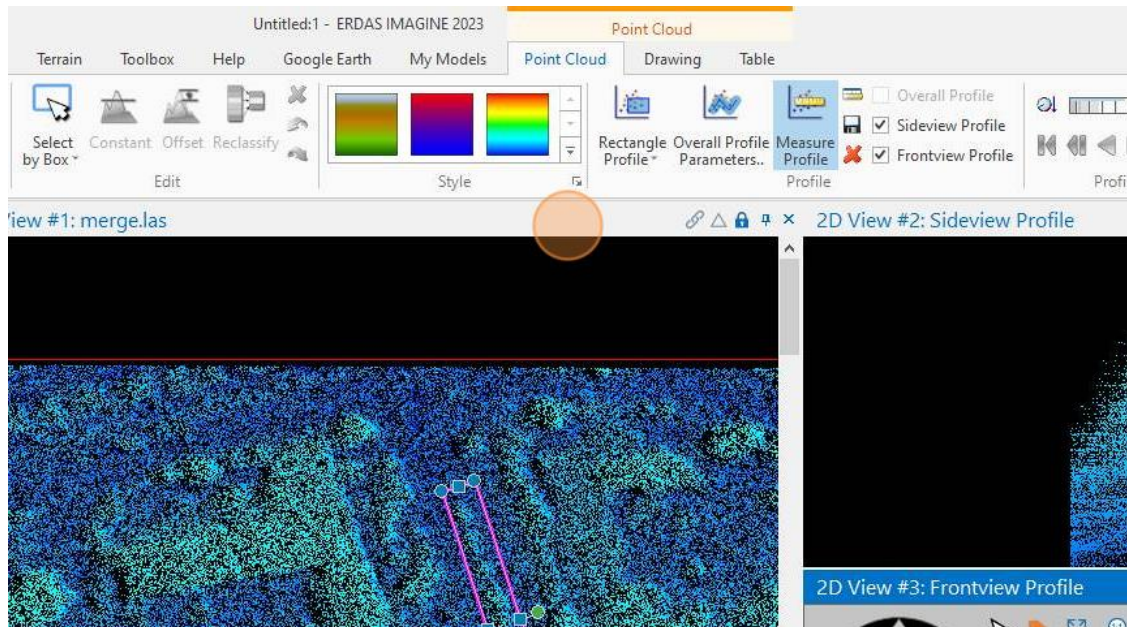
72. You can see the results of the measurements in the table below the profiles.



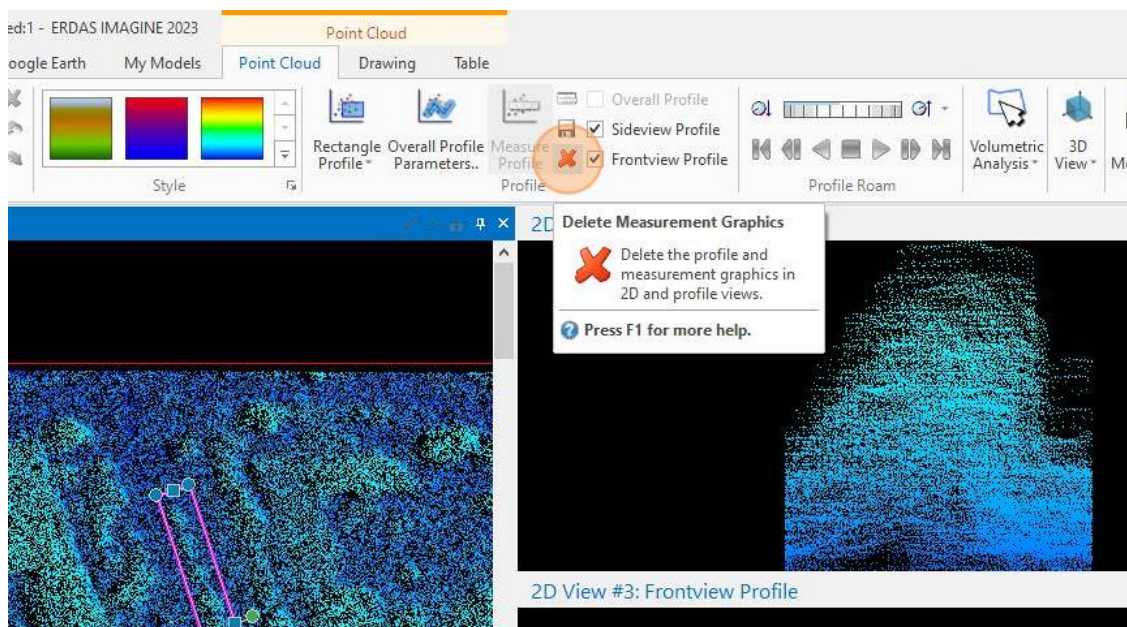
73. Now let's measure the distance between the 2 trees



74. Now let's select again the main "2D View #1: merge.las"

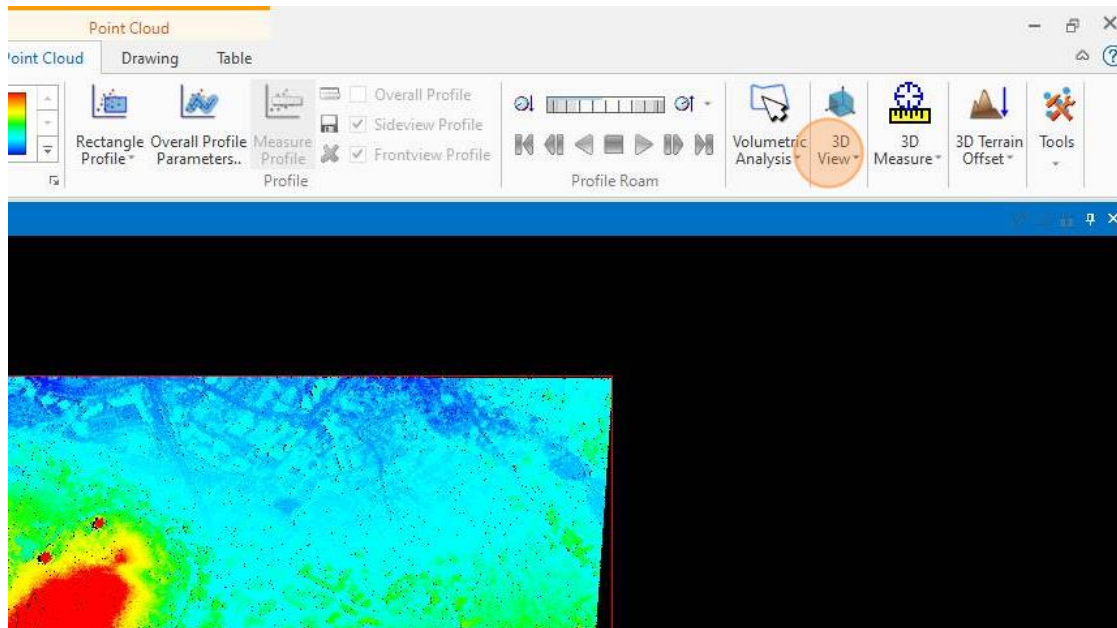


75. And click on the red cross Click "Delete Measurement Graphics" to close the profiles and the measurements.

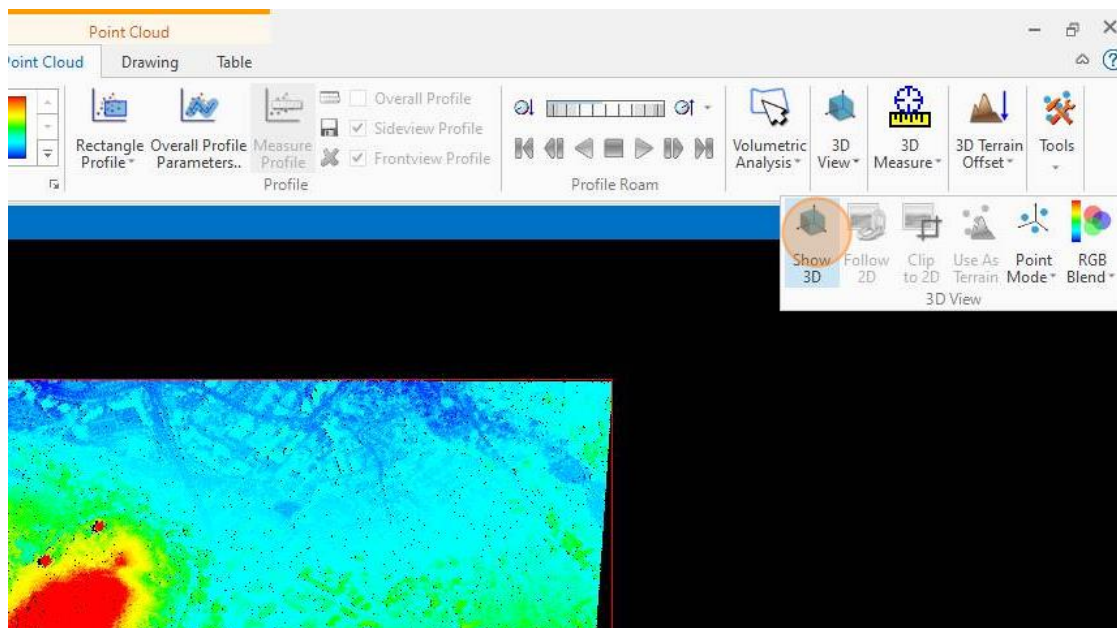


3D Point cloud visualization and measurements

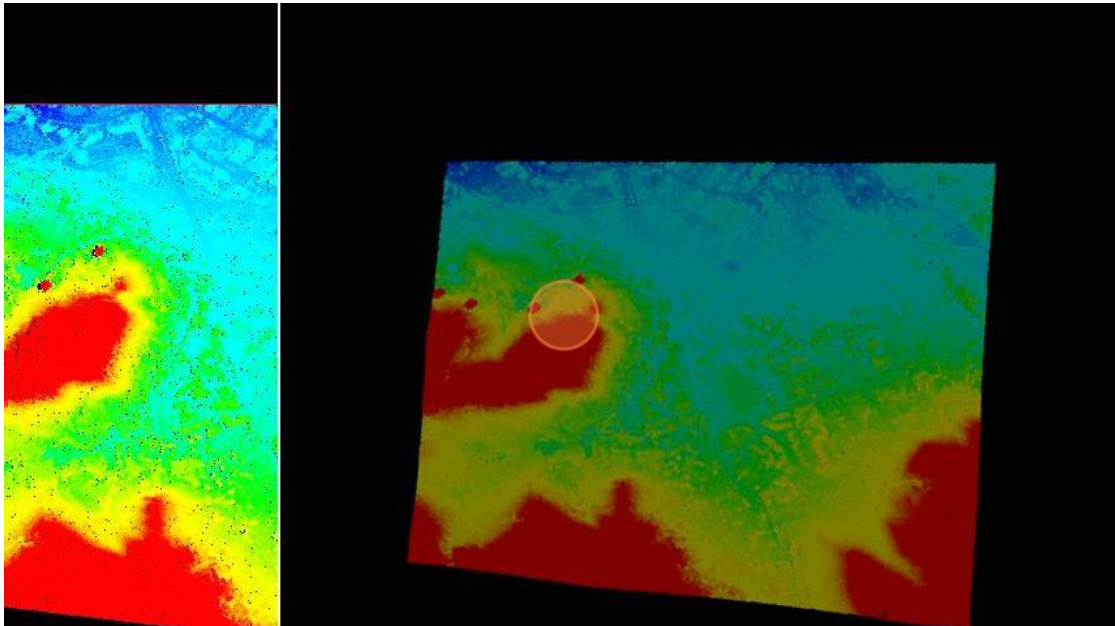
76. Click "3D View"



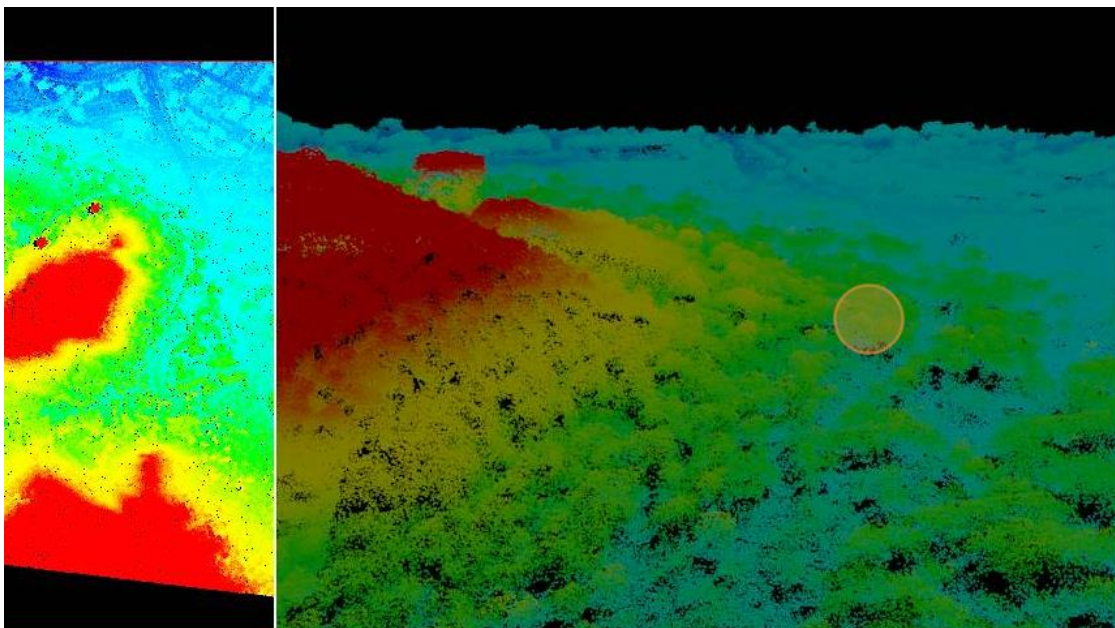
77. Now click on Show 3D



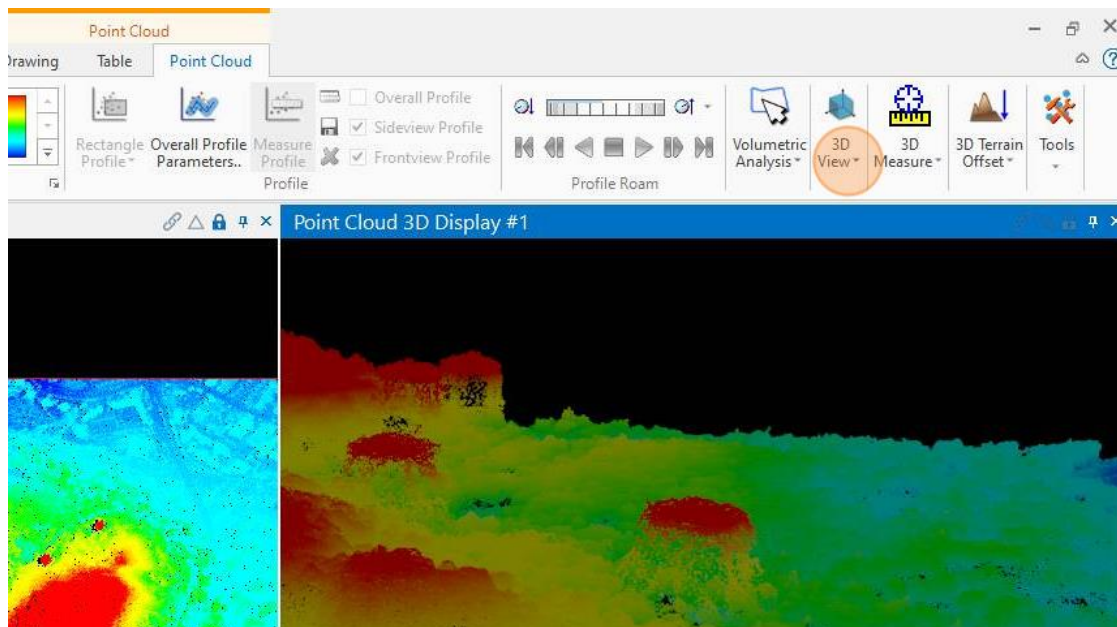
78. On the right you will see the 3D view. You can navigate it using your mouse.



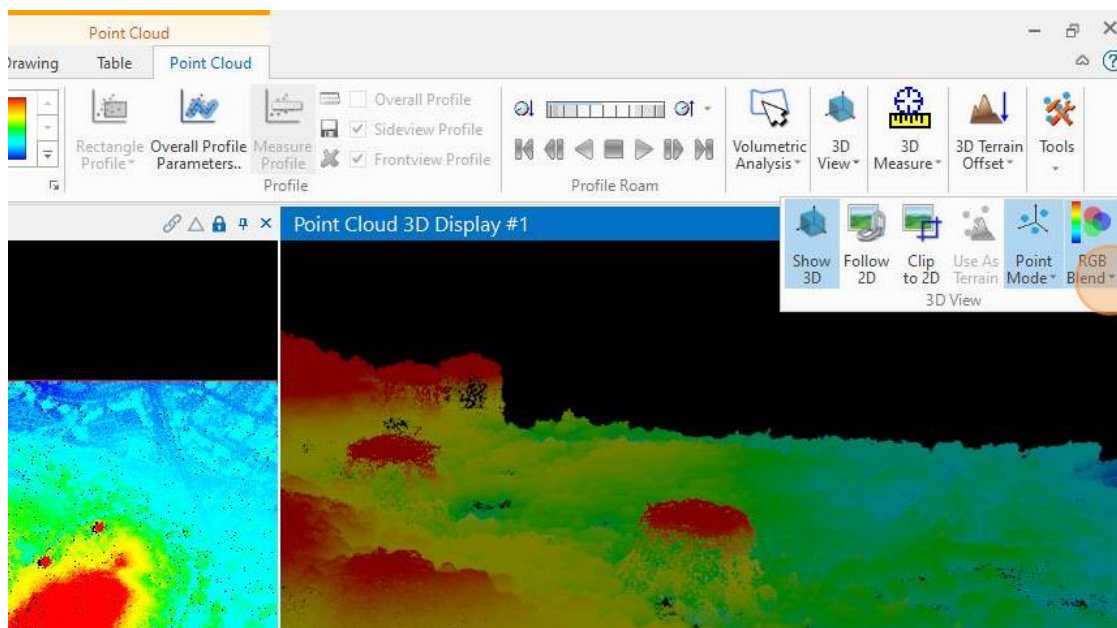
79. Navigate the 3D model



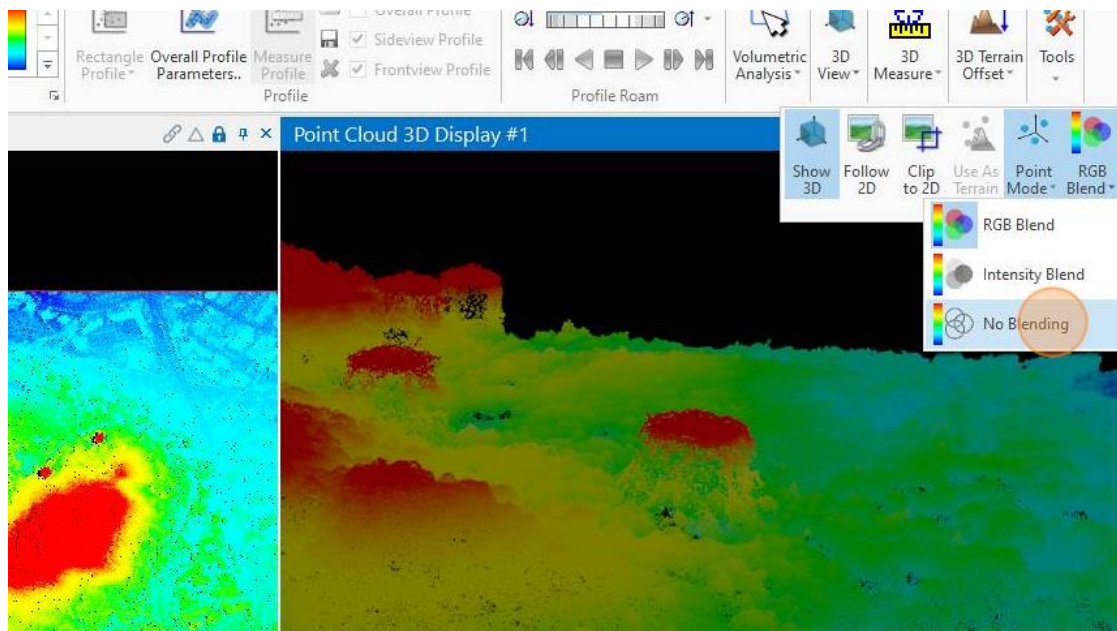
80. Click "3D View"



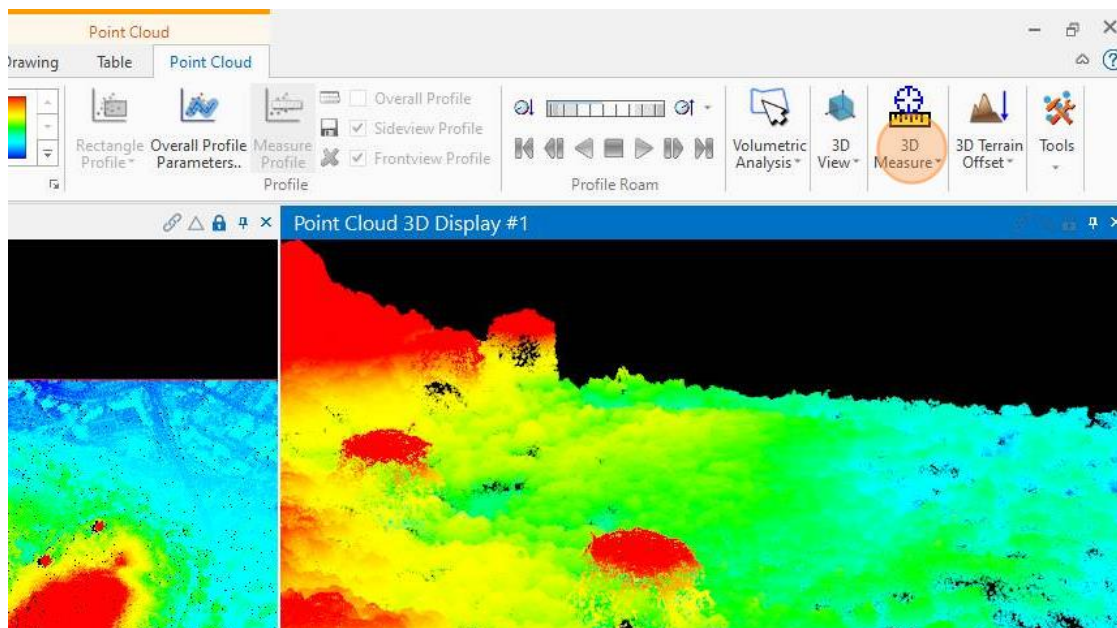
81. Click "RGB Blend"



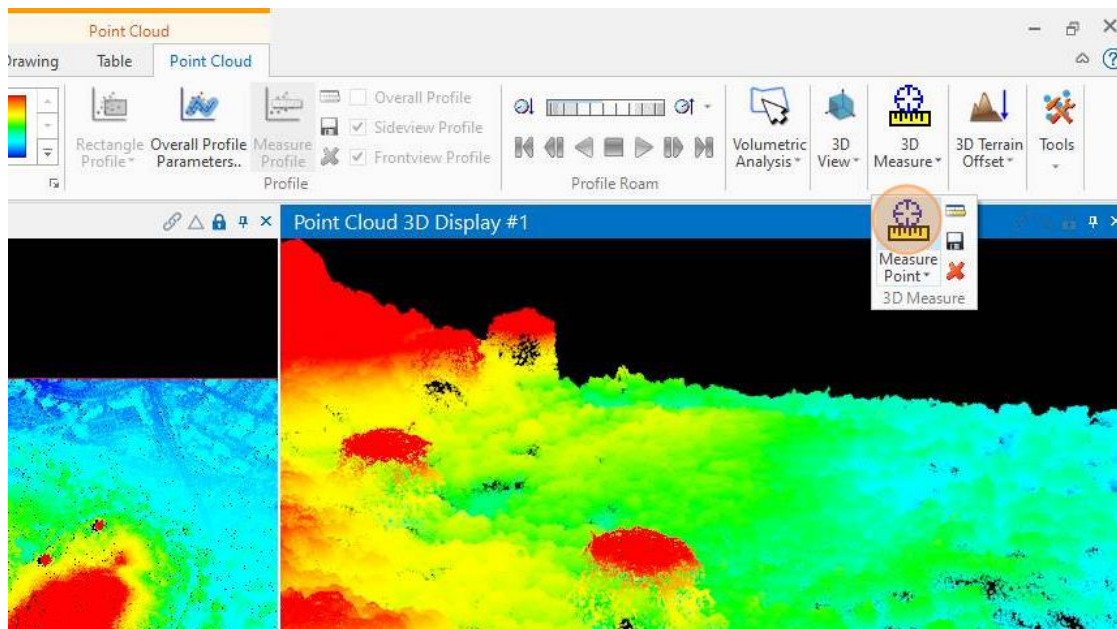
82. Click "No Blending"



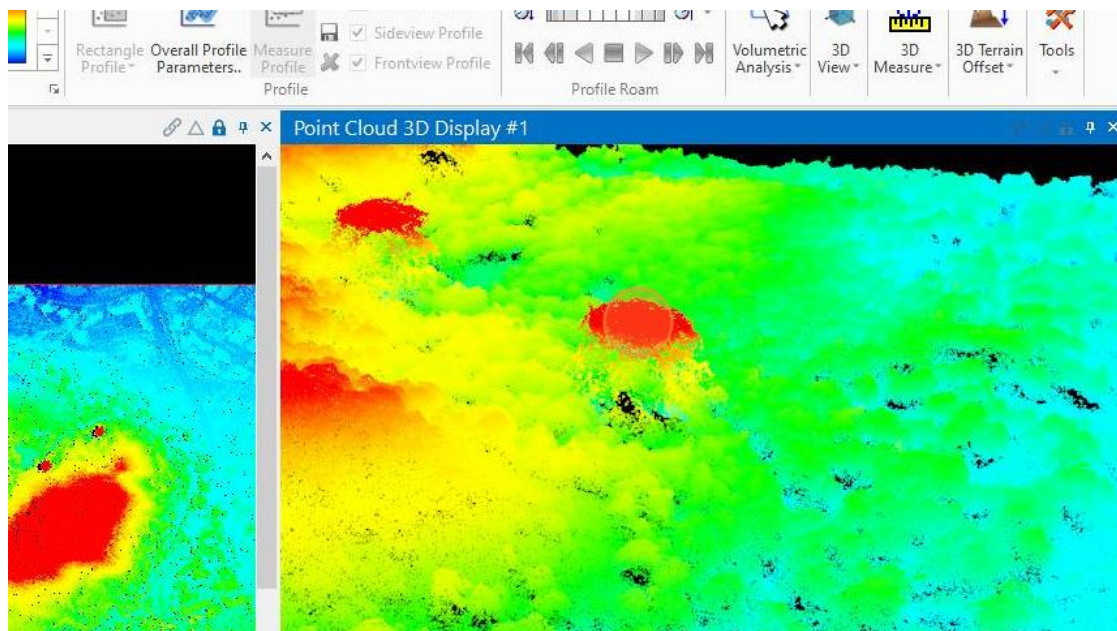
83. Click "3D Measure"



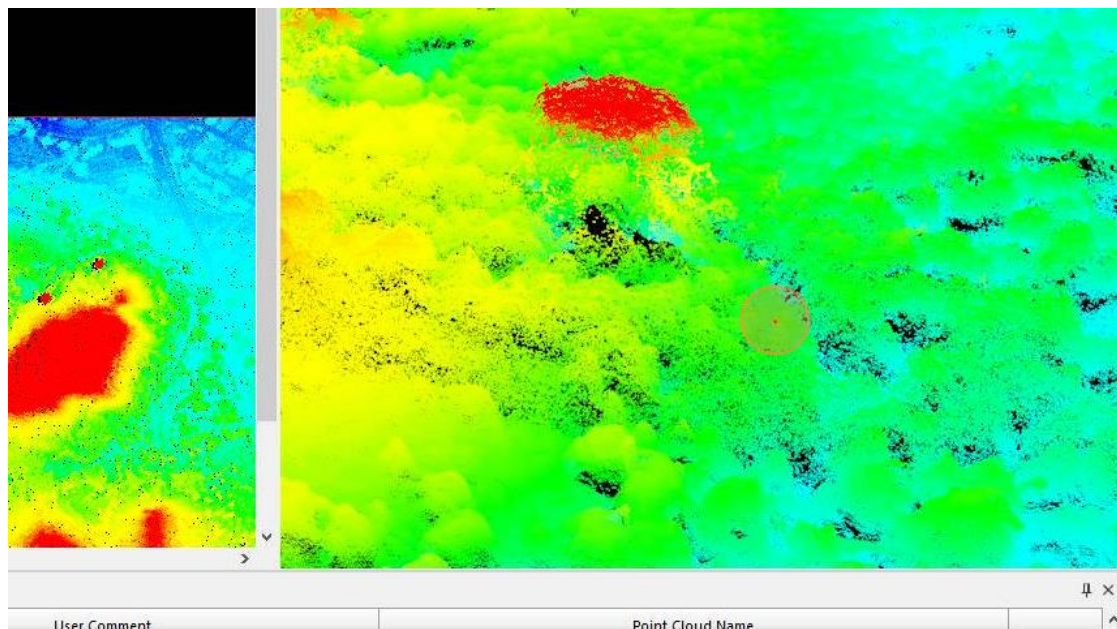
84. Click Measure Point:



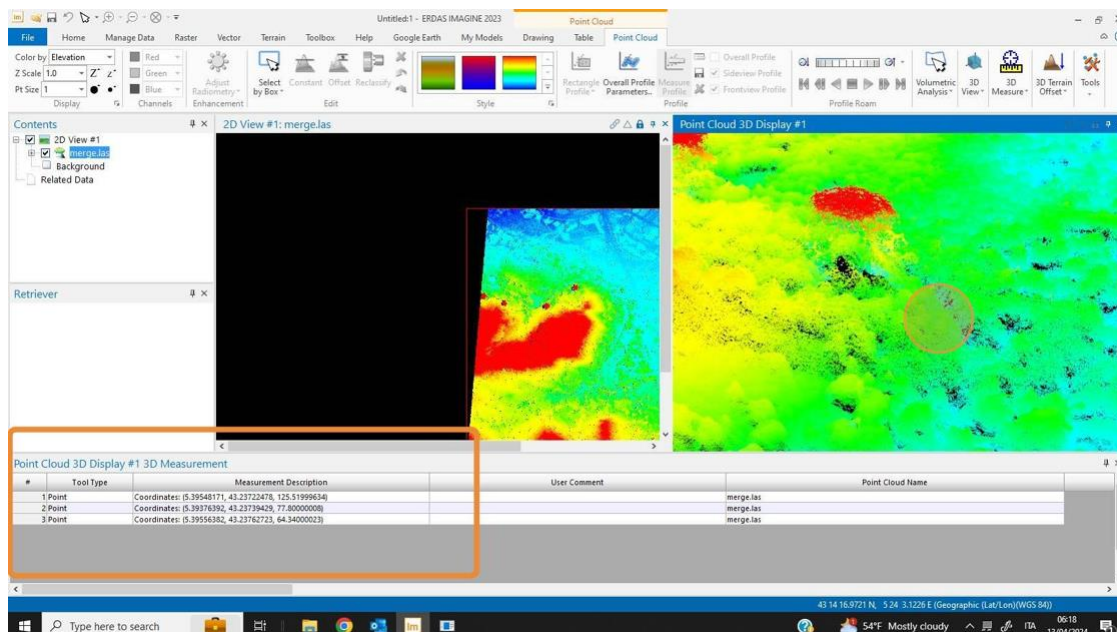
85. Click on a point to measure the 3D coordinates



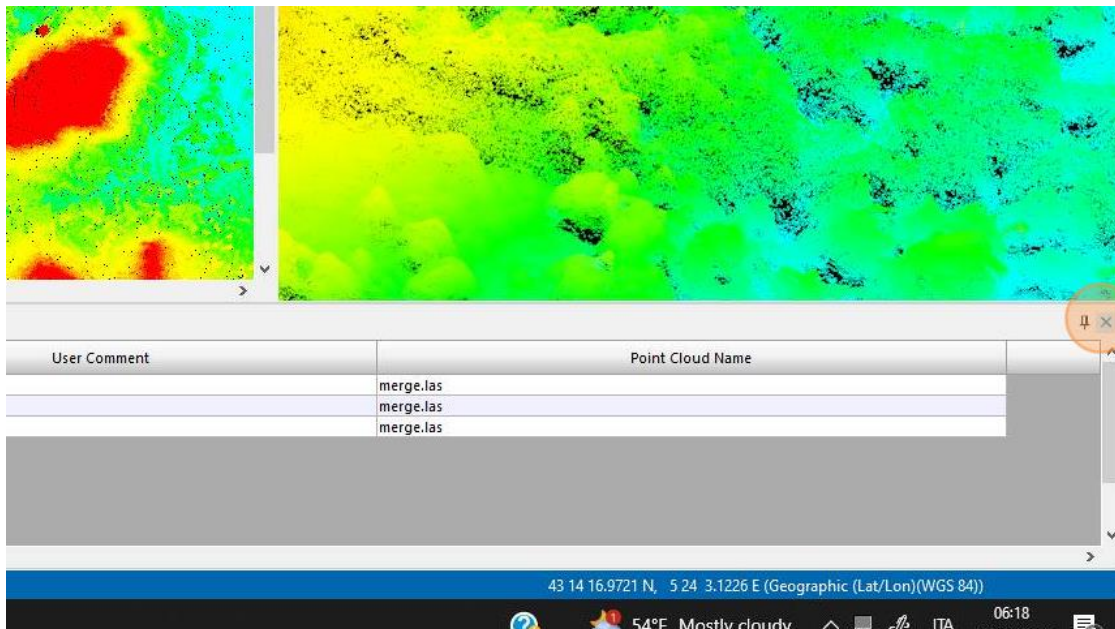
86. You measure the 3D coordinates of the red point of your cursor.



87. The measurements will appear here.



88. Click "Close" to close the measurements table.



89. Click here to close the 3D view.

