

SLAM GO POST PRO V2.1.0

Data process

Shenzhen Feima Robotics Technology Co., Ltd.


V 2.1.0


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1. Create Project

1.1 Raw Data

1.1.1 SLAM100 Raw Data

The data collected by the SLAM 100 is stored on the device's SD card, and the collected data packages are stored in a folder named "SN_XXXXX". The raw data contains photo data, IMU file data, raster file data, laser file data, equipment calibration file, and control point marker file.

camera0		2023/6/16 15:15	文件夹	
camera1	Camera data	2023/6/16 15:15	文件夹	
camera2		2023/6/16 15:15	文件夹	
230522-032946_00110_IMU_DATA_0001.txt	IMU data	1/5/22 3:41	文本文档	60,084 KB
230522-032946_00110_RASTER_DATA_0001.txt	Raster data	/22 3:41	文本文档	19,443 KB
230522-032946_00110_SLAM_Pandar_0001_0.pcap	Lidar data	/5/22 3:41	PCAP 文件	653,194 KB
feima_slam100_calib.yaml	Calibration document	2023/5/22 3:31	YAML 文件	4 KB
gcp.TXT	Control point document	2023/5/29 9:23	文本文档	1 KB
task_info.txt		2023/5/22 3:31	文本文档	1 KB

Fig. Raw data

1.1.2 S-RTK100A Raw Data

RTK data is stored in the SRTK memory card, and when using it, you need to copy the corresponding fmnnav file in the Nav folder to the corresponding raw data folder.

名称	修改日期	类型	大小
2022-10-9-7-16-6.fmnnav	2022/10/9 15:50	FMNAV 文件	285 KB
2022-10-9-7-17-55.fmnnav	2022/10/9 15:50	FMNAV 文件	1,384 KB

camera0		2023/7/5 15:40	文件夹	
camera1	Camera data	2023/7/5 15:41	文件夹	
camera2		2023/7/5 15:41	文件夹	
2023-7-1-6-19-50.fmnnav	RTK trajectory document	4 17:16	FMNAV 文件	18,256 KB
230701-062332_00011_IMU_DATA_0001.txt	IMU document		文本文档	830,834 KB
230701-062332_00011_RASTER_DATA_0001.txt	Raster document		文本文档	282,013 KB
230701-062332_00011_SLAM_Pandar_0001.pcap	Lidar document		PCAP 文件	8,972,359 KB
feima_slam100_calib.yaml	Calibration document	3/7/4 17:17	YAML 文件	5 KB
task_info.txt		2023/7/4 17:17	文本文档	1 KB

Fig. RTK raw data

1.1.3 S-PANO100 Raw Data

The S-PANO data is stored in the device, and after acquisition the device is connected directly to the computer to copy the data out. Only the data in the src folder is needed for the solving.

名称	修改日期	类型	大小
config	Raw Data Package	文件夹	
log	Camera debug log	文件夹	
pano	In-camera stitching of photo and video data	文件夹	
src	Off-camera stitching of photo data	文件夹	
update	update packages	文件夹	
log.conf	2023/8/17 10:13	CONF 文件	

Fig. S-PANO Raw Data

The internal folder naming scheme of the src catalog is:

year-month-day/times/hour-minute-second/four original images

名称	修改日期	类型
2023-06-14_03_57_39_499701_1.jpg	2023/6/13 19:57	JPG 文件
2023-06-14_03_57_39_499701_2.jpg	2023/6/13 19:57	JPG 文件
2023-06-14_03_57_39_499701_3.jpg	2023/6/13 19:57	JPG 文件
2023-06-14_03_57_39_499701_4.jpg	2023/6/13 19:57	JPG 文件

Fig. Panoramic Pictures Storage Path

S-PANO panoramic camera template files (iprj.fmm, oprj.fmm) are stored in the config folder, which are used for panoramic camera panorama stitching. Each camera has a set of customized templates, and templates between different cameras cannot be mixed.

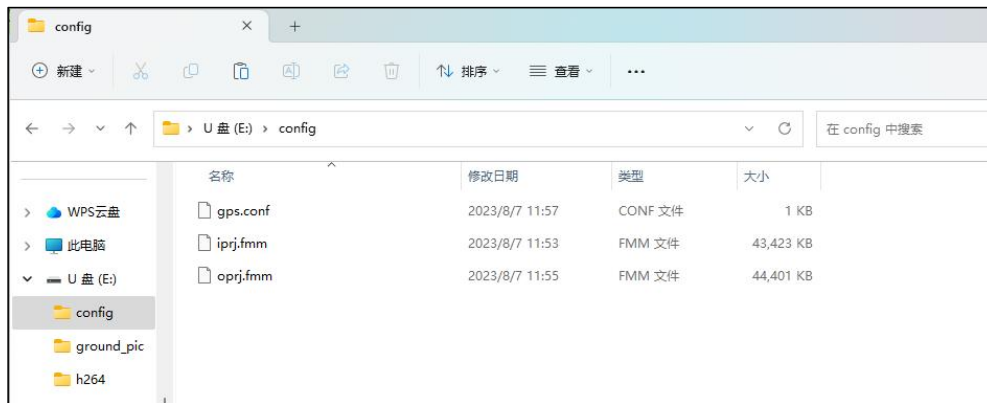


Fig. Panoramic Camera Template

The specific operation is as follows:

1. When the computer processes panoramic camera data for the first time, you need to copy the two template files iprj.fmm and oprj.fmm under the config folder of the panoramic camera device to the path of the computer [UAV Manager installation directory \UAVManager4\LidarDataProcess\slamgo_post\data].
2. If you need to process the data of another panoramic camera on that computer, copy the two template files of the new panoramic camera to the path of the computer [UAV Manager installation directory \UAVManager4\LidarDataProcess\slamgo_post\data] to replace them.

1.2 Create Project

1.2.1 Handheld Mode

Click [New], set the project name and project path, the platform to select [Handheld], click [Next], in the input path to select the folder where the original data, the software will automatically identify the data in the folder, click [Finish] to complete the project creation.

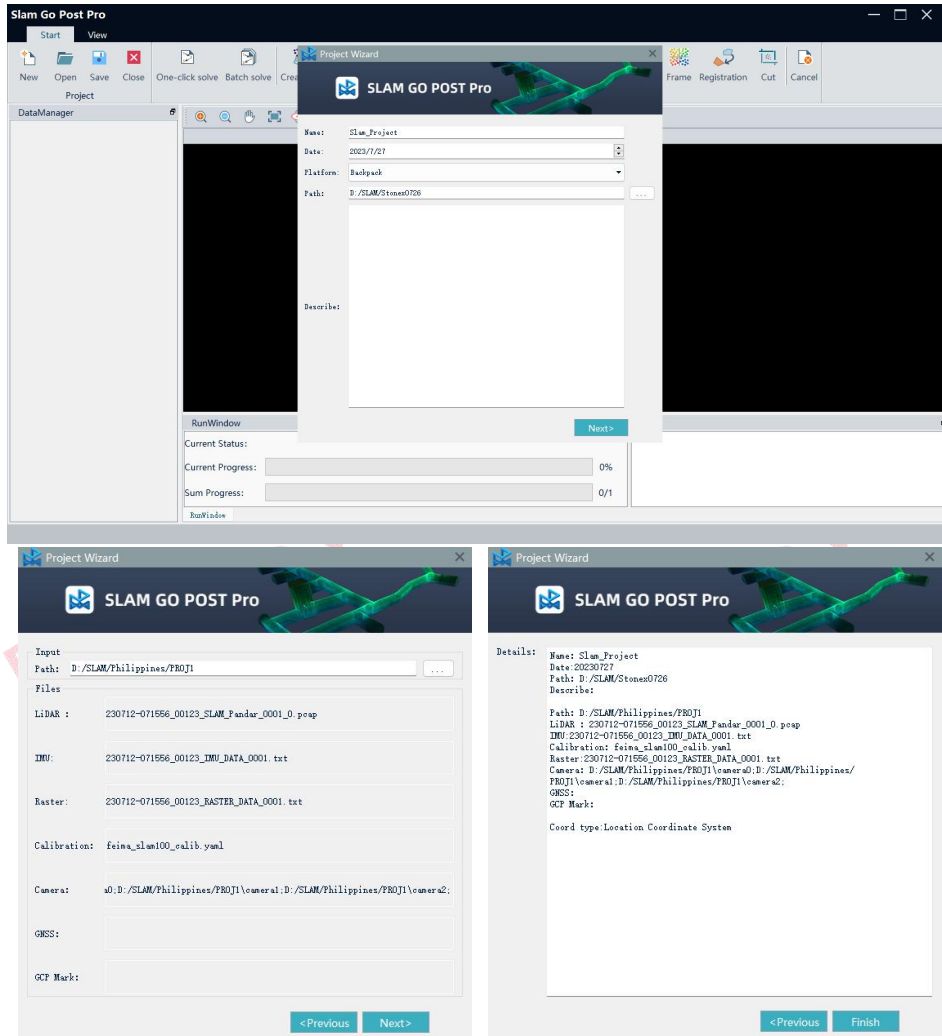


Fig. New project

1.2.2 Backpack Mode

Click [New], set the project name and project path, the platform selects [Backpack], click [Next], select the folder where the original data is located in the input path, the software will automatically identify the data in the folder, click [Next] to set the results of the coordinate system, click [Finish] to complete the creation of the project.

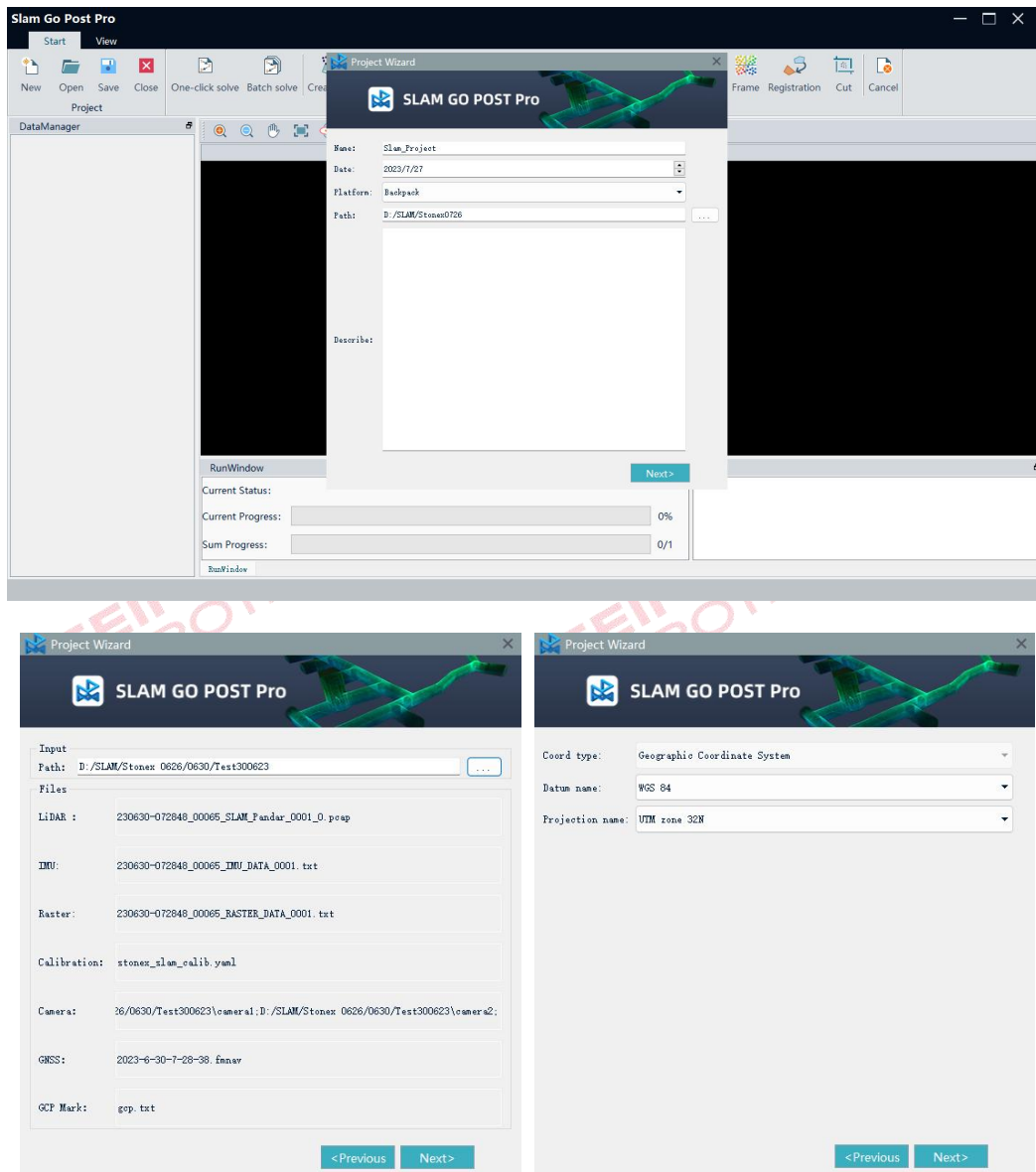


Fig. Crate project

1.2.3 Extension Pole

This mode is applicable to the operation of handheld+extension pole+srk with the following flow:

Click [New], set the project name and project path, platform selection [Extension pole], click [Next], in the input path to select the folder where the original data, the software will automatically identify the data in the folder, click [Next] to set the results of the coordinate system, click [Finish] to complete the creation of the project.

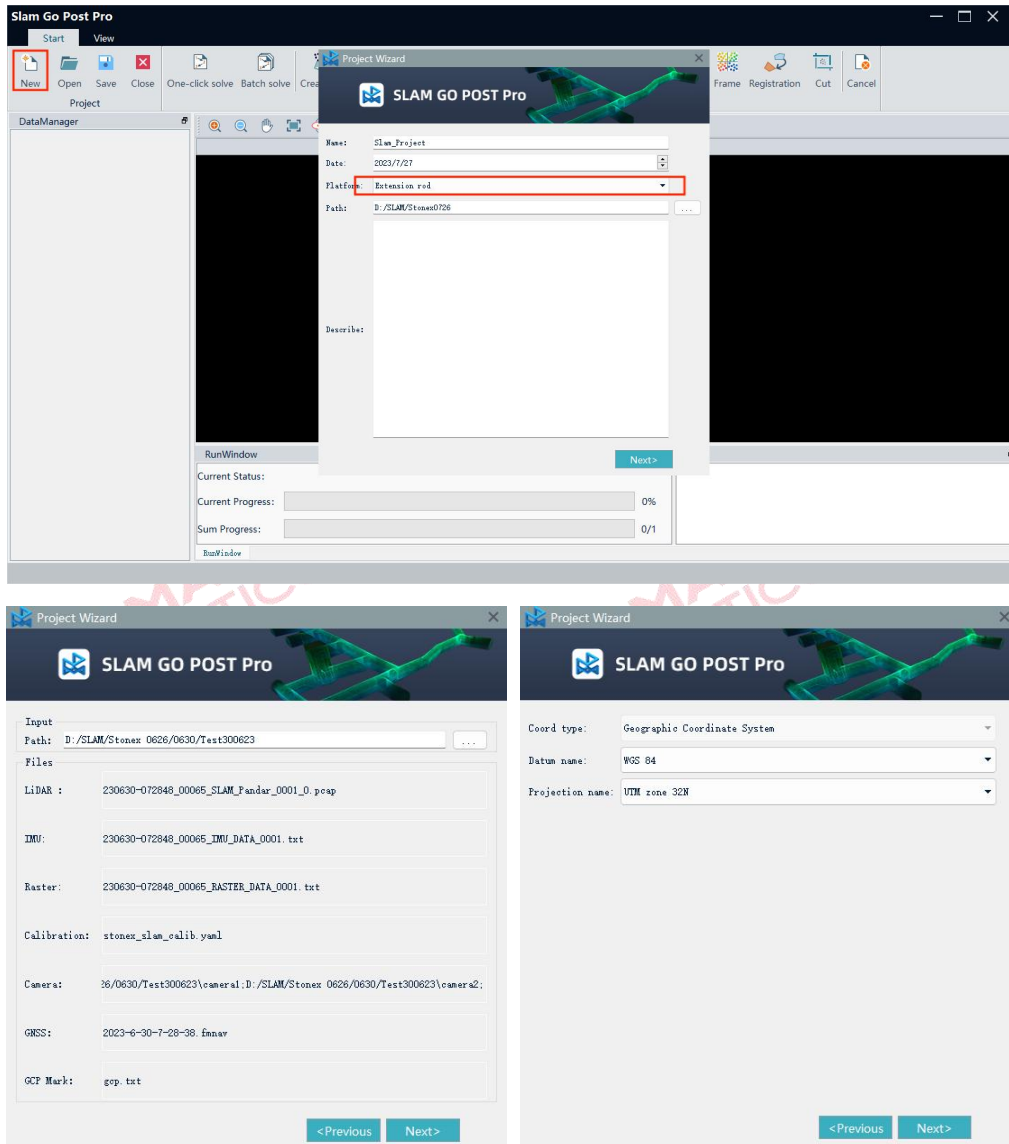
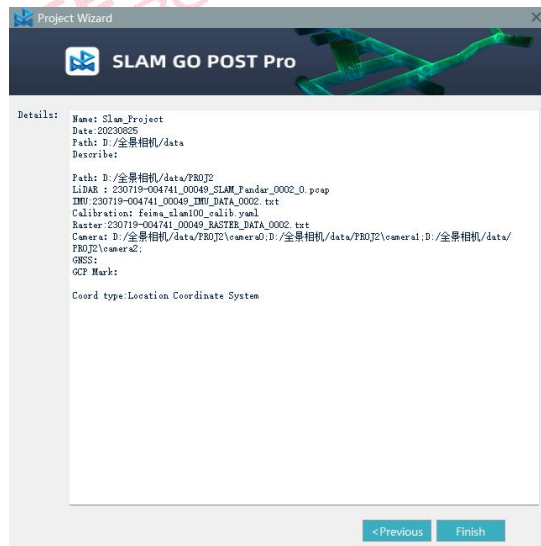
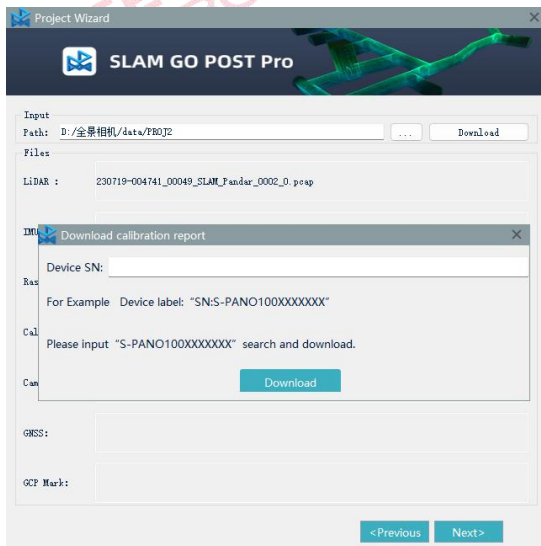
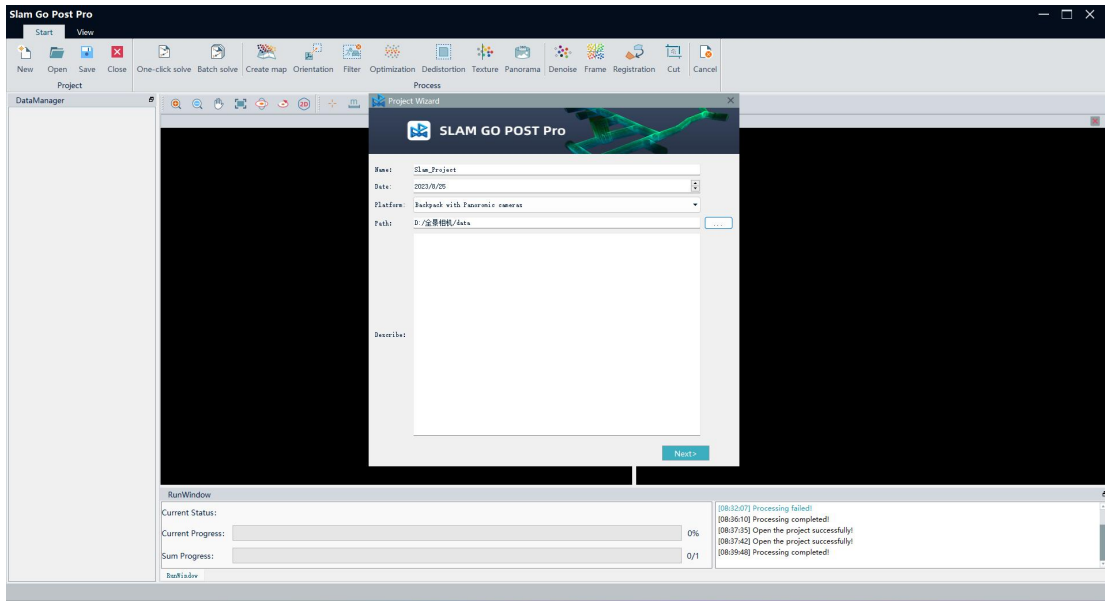


Fig. Crate project

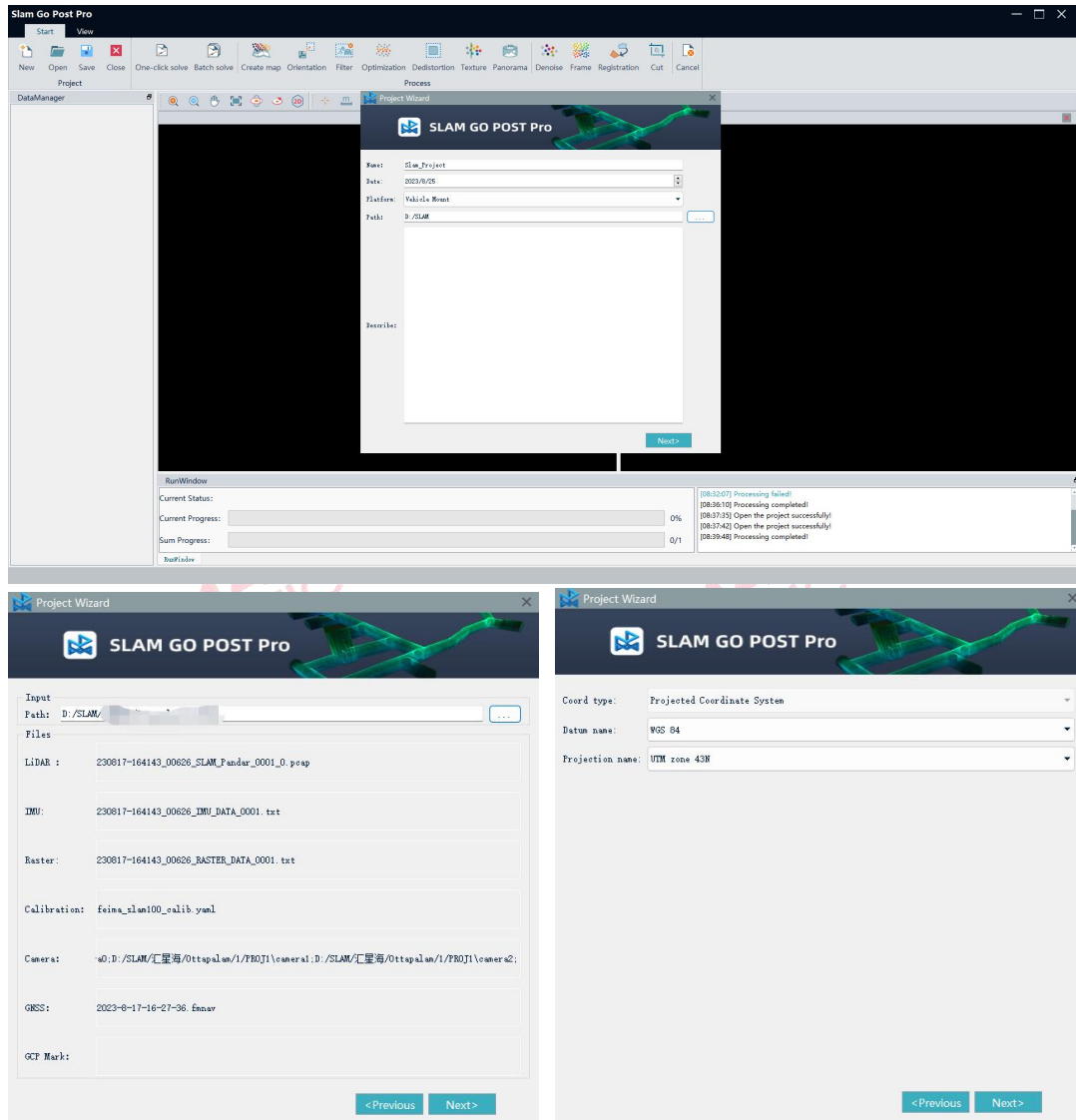
1.2.4 Backpack+Panoramic Camera

Click [New], set the project name and project path, platform selection [**backpack with panoramic camera**], click [Next], in the input path to select the folder where the original data, the software will automatically identify the data in the folder, click [Download] according to the prompts to download the calibration report, click [Next] to set the results of the coordinate system, click [Finish] to complete the project creation.



1.2.5 S-Mobile

Click [New], set the project name and project path, the platform selects [Vehicle Mount], click [Next], select the folder where the original data is located in the input path, the software will automatically identify the data in the folder, click [Next] to set the results of the coordinate system, click [Finish] to complete the creation of the project.



1.3 Add Control Points

Right-click on the control point data function in the data management window, select **[Add Data]**, and import the organized control point files into the software. The software supports the setting of the local coordinate system and the projection coordinate system, but the setting does not affect the final output of the point cloud coordinates. **Coordinate conversion using non-rigid body conversion must set the projection coordinate system.**

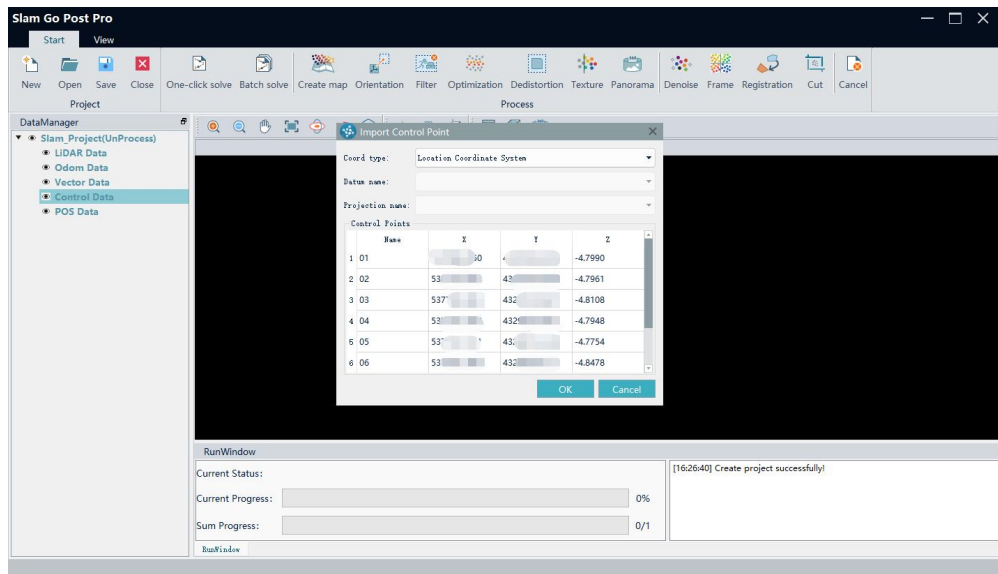


Fig. Add control point

Notice:

1. The order recorded in the control point file must be consistent with the order and number in the actual acquisition process of the scanner, otherwise the control points will correspond incorrectly, leading to errors in the solution.
2. Control points do not support latitude and longitude for the time being, but now support projected coordinates or spatial right-angle coordinates. The format of the control point file should be in .txt format, with four columns of content, which are: **ID**, **east coordinate**, **north coordinate**, **elevation** (Symbolic is in English).

2. Data process

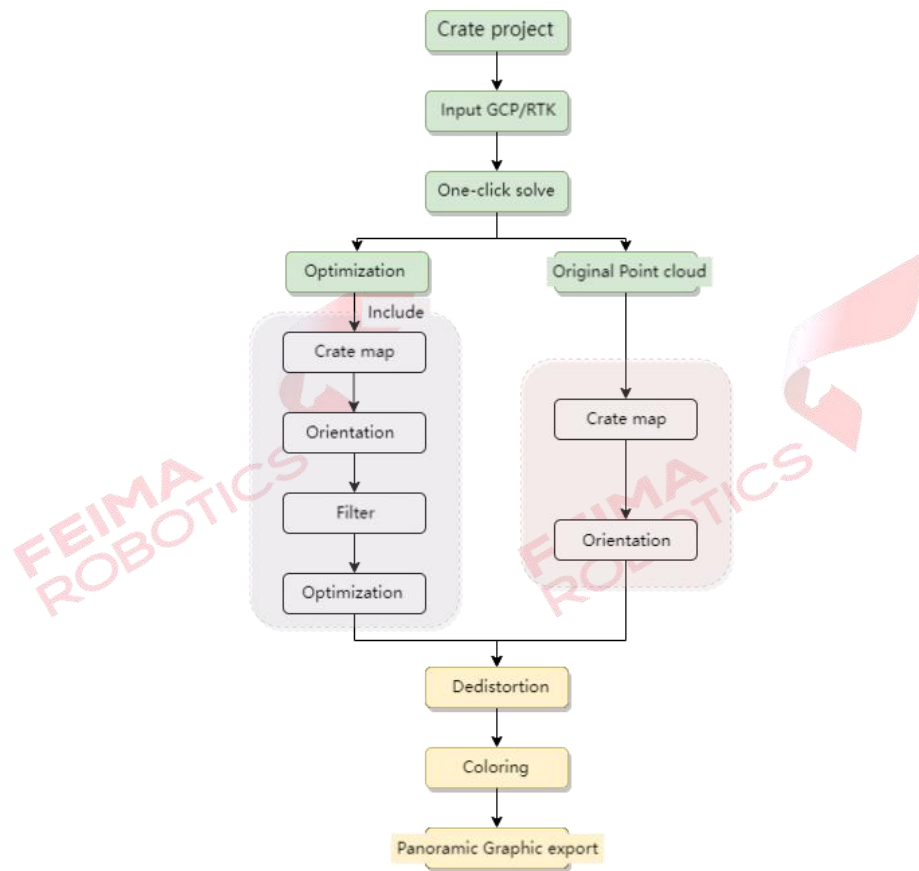


Fig. One-click solve

2.1 One-click solve

2.1.1 One-click solve

After the new project is created, click **[One Click solve]** in the data processing toolbar, and set different parameters according to the collection scenarios and requirements of the results, and the parameters are explained as follows:

1) Crate map type

Original map construction: this mode of map construction outputs the original point cloud data results, the software does not carry out point cloud optimization processing, the subsequent steps are based on the original point cloud.

Optimization: In this mode, the software automatically carries out pedestrian filtering and point cloud optimization after building the map.

(2) Algorithm for building maps

Fast mode: fast map building speed, slightly worse map building effect and accuracy.

High-precision mode: slow map building speed, higher map building effect and precision.

Note: 1. In the case of collecting control points, the software skips the stationary time by default, and there is no need to ignore the data segments actively.

2. Use the high precision mode to solve the data, after the start of the collection must be stationary on the ground for 60s.

3) Use of equipment

Currently limited to panorama stitching function, if there is no graphics card that supports general-purpose computing, you can manually switch to CPU mode.

4) Acquisition stability [1-5]

Fast mode: If the device after calibration is a relatively open area scene, the parameter value is set to the maximum of 5. If the device after calibration is a staircase and other scenes that often rotate and turn, the parameter is set to 4 or 3.

High-precision mode: prioritize the use of stabilization 5 for solving.

The current algorithm is an automatic enumeration mode, i.e., the first use of the set degree of stability for point cloud mapping, if the solution prompts the point cloud floating, then the software automatically uses the next level of stability for point cloud mapping, and so on, until the mapping is successful to continue to execute the subsequent steps; if until the degree of stability of 1 also mapping failures, the program stops the process, and the software prompts a failure of the solver.

5) Ignore data segments

Eliminate static redundant data/eliminate poor quality data, no need to set the ignore time for standard acquisition mode.

6) Data segment duration

Solve the data of the given time duration, this parameter can solve any time segment point cloud data with the jump second time parameter.

7) Point cloud orientation

Rigid: based on the control points directly to the solved point cloud to do coordinate transformation.

Non-rigid: optimize the point cloud and orient it based on control points or RTK data.

8) Other results

Panorama: a panoramic image stitched together from a single image.

Point cloud coloring: coloring of point cloud data from images.

Note: Point cloud coloring is a single piece of coloring and not a panorama coloring, so it has nothing to do with the panorama.

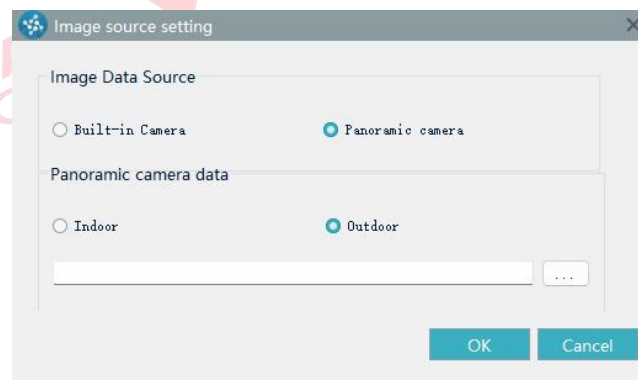



Fig. Raw Pictures Setting

9) Other settings

First and last same point: the first and last constraints are set to form a closed loop to eliminate layering.

Note: The function of first and last same point is only applicable to the weak texture terrain, and layering after conventional solving, and it must be ensured that there are 5-10m repeated routes at the closed loop and the distance between the start collection point and the end collection point is not more than 1m when collecting in the field, therefore, under the regular circumstances, it is not necessary to check the first and last same point when solving.

Real-time display of map building: real-time display of point cloud building process.

Pedestrian Filtering: Choose whether to perform pedestrian filtering according to your needs, and click  to set the pedestrian filtering parameters.

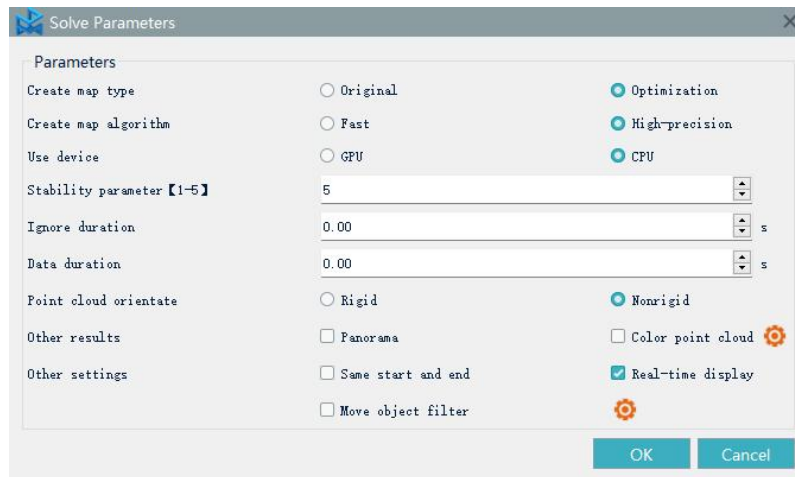


Fig. One-click solve

2.1.2 Load point cloud

Select the point cloud to be viewed, right click and select **[Add to View]** to add the point cloud to the main view.

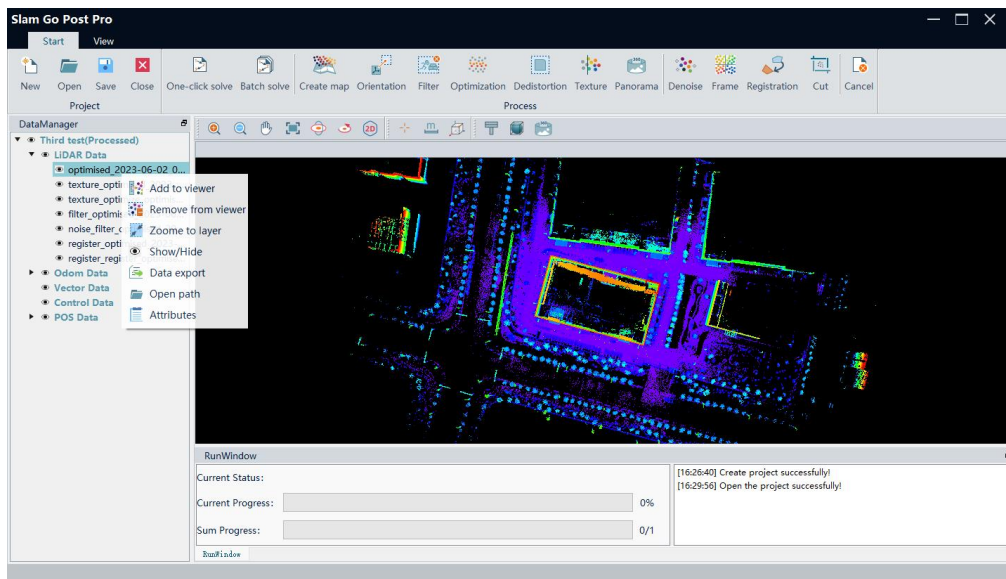


Fig. Load the point cloud

2.1.3 Data export

After the point cloud is solved, the needed point cloud results will be exported to las format, right click on the corresponding point cloud data, click **[Data Export]**, select the save path and save name, and the data export will be completed after prompting the export success.

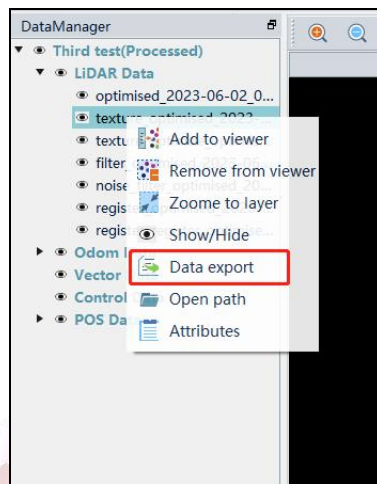


Fig. Data export

2.2 Step by step solve

2.2.1 Crate map

Right-click to activate the corresponding project before point cloud construction, when only one project exists in the data management window, the software defaults its activation status, i.e., it is displayed in blue, at this time, there is no need to activate the processing separately. Click [**Point Cloud Construction**], the Slam solving parameter setting dialog box pops up, select the processing mode and set the parameters, click [**OK**] to start solving, after the completion of the point cloud data generated by the point cloud for the original point cloud after the construction of the map.

Parameter settings are the same as in 2.1 One-Click Solving.



Fig. Point cloud crate map

2.2.2 Orientation

Click [**Orientation**] in the data processing toolbar to redirect the point cloud, this step can transfer the relative coordinates of the point cloud to the absolute coordinate system where the control points are located. Select the point cloud data to be redirected in the redirection dialog box, click [**OK**] to start the redirection, if the number of control points and matching points are not the same, edit the control points and run [**Orientation**] again. The point cloud loaded in the redirected point cloud data starting with gcp is the result of the redirection.

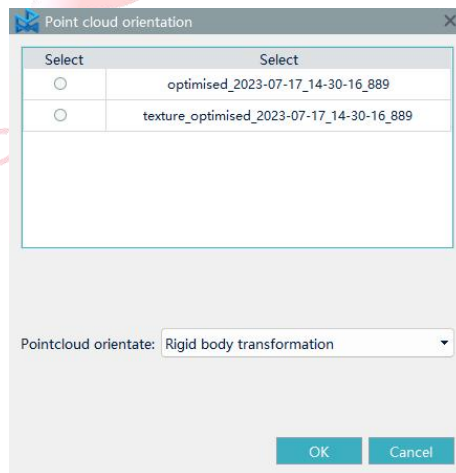


Fig. Orientation document select

Note: Selection of point clouds is not supported for non-rigid transformations.

2.2.3 Pedestrian Filtering

Click **[Filter]** in the data processing toolbar to filter the moving target.

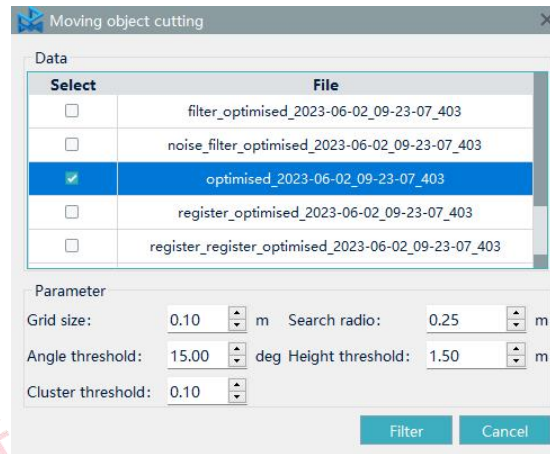


Fig. Filter

First select the data to be processed for pedestrian filtering, and set the pedestrian filtering parameters in the **[Parameters]** tab. The point cloud loaded in the point cloud data at the end of the processing starts with filter as the result of the filtering.

- Grid size: the size of the filter grid into which the point cloud data will be divided, in meters, default 0.1.
- Search radius: the size of the range used to perform search when performing clustering.
- Angle threshold: the angle between the normal vectors of two neighboring points in the clustering process, less than this threshold is considered as a faceted object.
- Height threshold: the height of the point to the detection center, points higher than this threshold are not involved in the calculation.
- Clustering threshold: the proportion of points after clustering to the number of points involved in the calculation, if it is greater than this value, it is considered as non-pedestrian.

2.2.4 Point cloud optimization

Click **[Optimization]** in the data processing toolbar to perform optimization processing. After selecting the point cloud data to be optimized, click **[OK]** to start processing. The point cloud with the beginning of optimize loaded in the point cloud data after processing is the optimized result data.

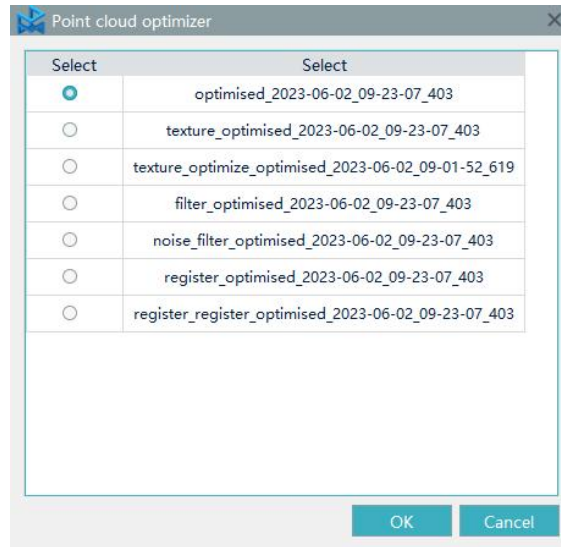


Fig. Point cloud optimized file selection

2.2.5 Dedistortion

Click [**Dedistortion**] in the data processing toolbar to start photo de-distortion processing. The de-distorted image data is saved in the dimages folder.

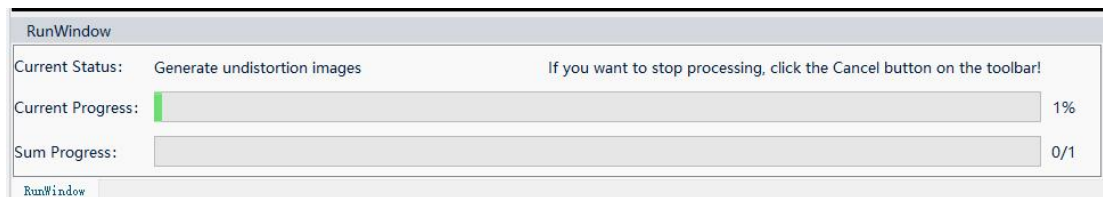


Fig. Dedistortion

2.2.6 Point Cloud Coloring

Click [**Texture**] in the data processing toolbar to perform point cloud color assignment.

In the point cloud coloring dialog box, check the point cloud file to be colored, click [**OK**] to execute the coloring. After color assignment, the point cloud data loaded with texture at the beginning of the point cloud is the result of color assignment.

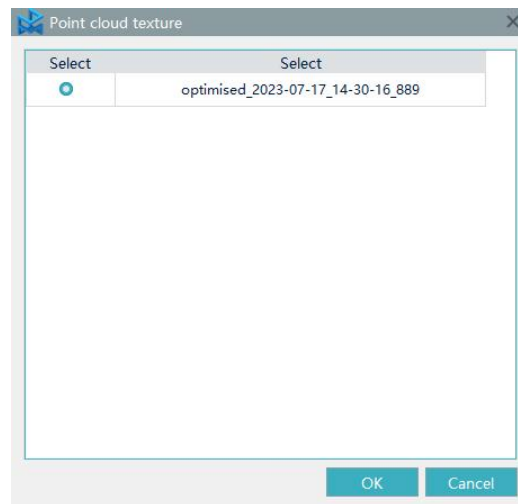


Fig. Point cloud coloring

2.3.7 Panorama Generation

Click [**Panorama**] in the data processing toolbar to generate a panorama. The panorama is saved in the pano folder by stitching together the distortion-free images.

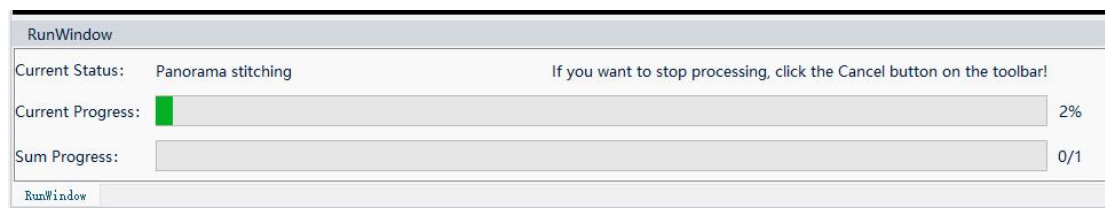


Fig. Panorama generation

2.3 Batch Solve

Click [**Batch solve**] on the data processing toolbar to bring up the Slam solver parameter setting dialog box, select the solver mode, solver parameters and solver process, and click [**OK**] to start solving.

Parameter settings are the same as in 2.1 One-Click Solving.

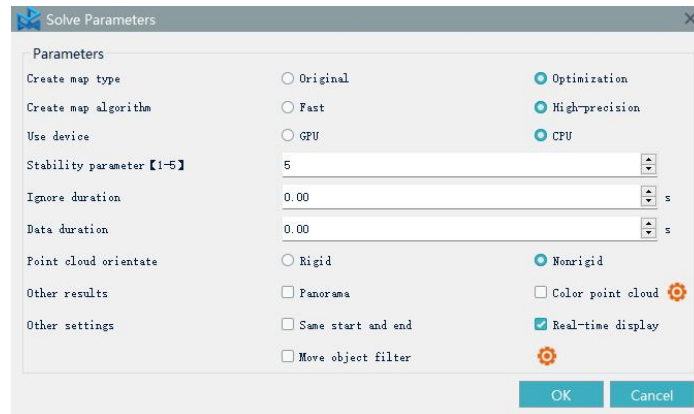


Fig. Batch solve

- Note: 1. It is necessary to separate batches of different equipment types.
 2. It is necessary to separate batch processing of projects with different parameters.

3. Point Cloud Editor

3.1 Denoise

Click the **[Noise Removal]** module in the data processing toolbar to remove noise from the point cloud. Before removing noise, you need to build the point cloud first. Click **[Noise Removal]** and select the point cloud to be de-noised. Set the number of points in the neighborhood and the standard deviation multiplier in the parameters, and click **[OK]** to start the noise removal process.

Number of field points: the required number of points in the neighborhood, used to calculate the average value of the distance to each point.(Recommend Default)
 Standard Deviation Multiplier: the factor to multiply with the standard deviation.(Recommend less than 20)

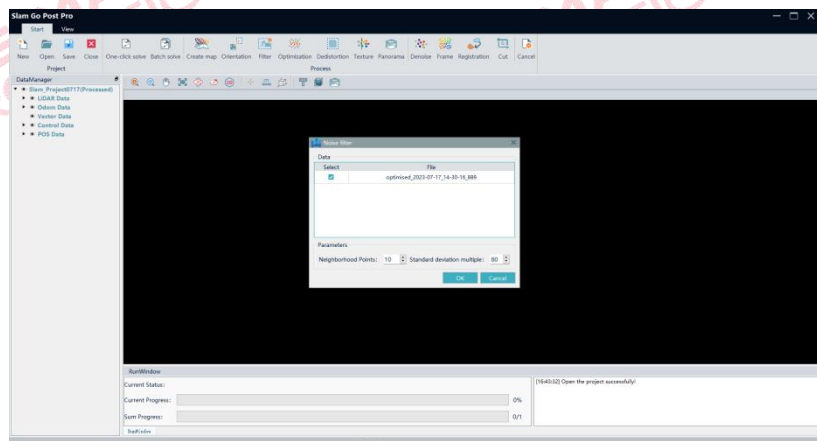


Fig. Denoise

3.2 Frame

Click [**Frame**], select the point cloud data that needs to be split, choose the splitting method (scale or fixed size), customize the prefix, scale, frame size, size, expansion range and starting coordinates, etc., and click [**Frame**] to split the data.

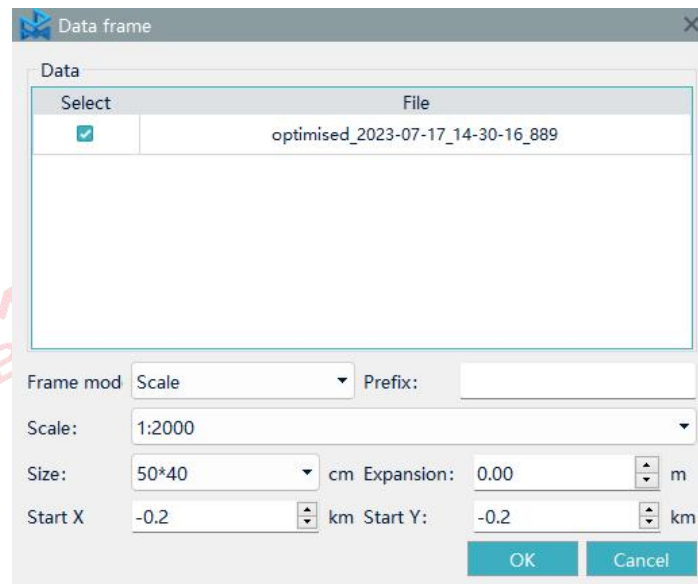


Fig. Frame

3.3 Registration

Before point cloud stitching conversion, you need to add the reference point cloud and the point cloud to be aligned to the view. Click [**Registration**], select the reference data and alignment data that need to be spliced and converted, support self-defined data color can also choose the rendering method, respectively, in the two groups of data to select the point, at least three groups of points with the same name, after the end of the selection of the point, you can adjust the alignment parameters (ICP), click [**Convert**] to complete the splicing.

Notice:

- Requires Ctrl to be held down when selecting points.
- Supports importing control point files, manual input, deletion and clearing of homonymous point information.
- Should ensure that the order of homonymous points is aligned and the medium error (RMS) meets the requirements before conversion.

- Grid size: it is for sampling interval, should not be too small generally larger than the RMS value, which can speed up the processing speed.
- Iteration number: the number of iterations of the ICP algorithm, generally 20 can be.
- Distance threshold, is the maximum distance between points of the same name, if the search for a match is greater than the threshold is not involved in the calculation.
- Distance iteration distance: is the difference between the distance calculated before and after two times, if it is less than this value, then exit the iteration.

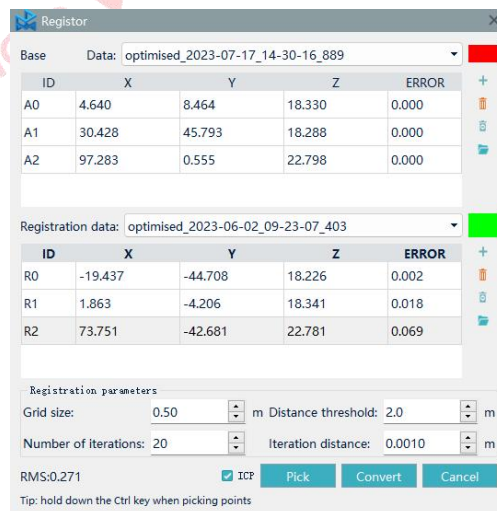


Fig. Registration and conversion

3.4 Point Cutting

Click [Cut], select the data to be cropped, the output method, add the cropping range (vector files support shp, dxf, fmb, kml formats), and the range of outreach, etc.. click [Cut] to perform point cloud cropping.

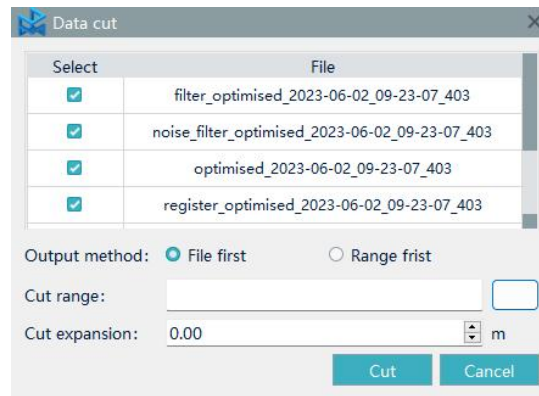


Fig. Point cloud cutting

4. Result Catalog

When the new project is completed, the following folder is created under the project name folder, which is used to save the result files generated by each processing module.

名称	修改日期	类型	大小
clip	2023/7/27 12:44	文件夹	
denoise	2023/7/27 12:44	文件夹	
dimages	2023/7/27 12:44	文件夹	
filter	2023/7/27 12:44	文件夹	
gcp	2023/7/27 12:56	文件夹	
odometer	2023/7/27 12:56	文件夹	
optimizer	2023/7/27 12:44	文件夹	
pano	2023/7/27 12:44	文件夹	
pos	2023/7/27 12:56	文件夹	
register	2023/7/27 12:44	文件夹	
subdiv	2023/7/27 12:44	文件夹	
temp	2023/7/27 12:56	文件夹	
texture	2023/7/27 12:44	文件夹	
Slam_Project1231.sprj	2023/7/27 12:56	SPRJ 文件	365 KB

Fig. Result index

Folder Functionality Description:

- clip: Save cut point cloud data.
- denoise: Save point cloud data after disnoise.
- dimages: Saving of de-distorted image data.
- filter: Save pedestrian filtered point cloud data.
- gcp: Save absolute directional odometers and point clouds.
- odometer: Save the odometer,

HF_odometry.txt for HF odometer,

LF_odometry.txt for sparse odometry,
optimised_odometry.txt is the optimized odometer.

- optimizer: Save optimized point cloud.
- pano: Preservation of panoramas stitched from distortion-free images.
- pos: Image POS folder, where camera_pos.txt is the image POS file, camera_trajectory.txt is the camera trajectory file, and lidar_trajectory.txt is the lidar trajectory file..
- register: Save Registration Point Cloud.
- subdiv: Save Frame Point Cloud;
- temp: Temporary project folder containing project information and raw point cloud data for map construction, log logs.
- texture: Save the color point cloud.
- TEST.sprj: Project file.

5. FAQ

5.1 GCP Collection

Connect the cell phone APP for active extraction of control points, use the control point mode during acquisition, after the end of the acquisition in the original data folder will generate the control point marking file gcp.txt, data solving according to the control point marking file for control point extraction.

Not connected to the cell phone APP for passive acquisition, the acquisition is stationary for 10s, and the control point is extracted according to the position of the stationary time when the data is solved. Based on the passive extraction mode, it is necessary to ensure that the stationary point is more than 5-10 meters away from the first control point in the process of field acquisition

5.2 Description of the new calibration of the high-precision mode

When the use of high-precision mode to build the map, found that the effect of building the map is not ideal, you can first through the inspection and calibration of the document to determine whether or not the second calibration (not all the equipment is required, and the calibration does not need to be returned to the factory),

judging the way is as follows, if the calibration has not been carried out, contact the staff of the internal industry to coordinate for the effect is not good for the data, the effect of calibration after the effect will be enhanced.

Opened *.yaml calibration file with lidarCorrect: [... ...] That is the device after the secondary calibration.



```

feima_slam100_calib.yaml - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
version: 20220519
parameters:
  hardware:
    slam_100-sn: SLAM100220300065
    lidar2rasterR: [0, 0, 0, 1]
    pcl2imuR: [0.006905, 0.003919, 0.009078, 0.999927]
    pcl2imuT: [0.06787, 0.00825, 0.12309]
    lidarCorrect: [3.0, 0.5]
  code: AgAAAeyzrpY+Da6bFNDPuxRSEDD9Sg/AABgwTH
+ST4RXGk9AAAAAK5HIT8VtAo8Cz8MPpoJzD17FFJB8PkwPdsqEz5QKRQ+rGMbPicaTj66sj68i1JGPqAAAAABHs2A

```

Fig. Calibration file after secondary calibration

5.3 Solving Prompts Data Floating Solving Fails

Point cloud building process run drift, you can reduce the stability to re-solve, or open the results folder in the temp folder in the log file, the bottom line prompts "**Exit: Mapping drifted!!!**" indicates that the data has drifted, find the last line of "Log I cpu 126.301 data 165.961 stamp 105318.998 position x -72.477829 y -33.911373 z -77.621452", in which the value after data is the value of the data drifted. The value after data is the amount of time the data has been running.

The data can be solved in segments by first solving the first half of the data using the data segment duration function and then solving the second half of the data using the Ignore Data Segment Duration function, which can only be solved in fast mode since the second half of the data does not contain the data for the 60s of the start of the ground standstill.

```

Log l cpu 118.140 data 151.394 stamp 105304.432 position x -87.740730 y -39.673676 z -112.043266
Log l cpu 118.669 data 152.410 stamp 105305.448 position x -86.214546 y -38.958515 z -108.176659
Log l cpu 119.277 data 153.497 stamp 105306.535 position x -84.465393 y -38.806610 z -104.215324
Log l cpu 119.832 data 154.535 stamp 105307.572 position x -82.786919 y -38.745983 z -100.261833
Log l ++++++output: 147, 0.799538
Log l cpu 120.479 data 155.636 stamp 105308.673 position x -81.144707 y -38.996563 z -96.803802
Log l ++++++output: 147, 0.777768
Log l cpu 121.073 data 156.647 stamp 105309.684 position x -79.814575 y -40.111832 z -93.908310
Log l ++++++output: 147, 0.751253
Log l cpu 121.634 data 157.653 stamp 105310.690 position x -78.823830 y -41.100086 z -91.976067
Log l ++++++output: 147, 0.717532
Log l cpu 122.185 data 158.658 stamp 105311.695 position x -78.974892 y -41.450073 z -92.439568
Log l ++++++output: 146, 0.678560
Log l cpu 122.781 data 159.664 stamp 105312.701 position x -78.811554 y -41.024845 z -92.079147
Log l ++++++output: 145, 0.640338
Log l cpu 123.316 data 160.669 stamp 105313.706 position x -78.712463 y -41.123997 z -92.039665
Log l best index: 150, best sc: 0.799538
Log l local loop: 147, 163, 0.799538
Log l cpu 123.863 data 161.762 stamp 105314.799 position x -78.210663 y -40.364994 z -90.860321
Log l cpu 124.352 data 162.781 stamp 105315.818 position x -76.923508 y -38.255119 z -87.836990
Log l cpu 125.044 data 163.868 stamp 105316.905 position x -75.146988 y -35.503147 z -83.494148
Log l cpu 125.687 data 164.892 stamp 105317.929 position x -73.887291 y -34.155991 z -80.787292
Log l cpu 126.301 data 165.961 stamp 105318.998 position x -72.477829 y -33.911373 z -77.621452
Log l stamp 105319.961189 v (2.347880, -0.179563, 5.226792)
Log l Exit: pose has drifted!!!
    
```

Fig. Crate map flying log

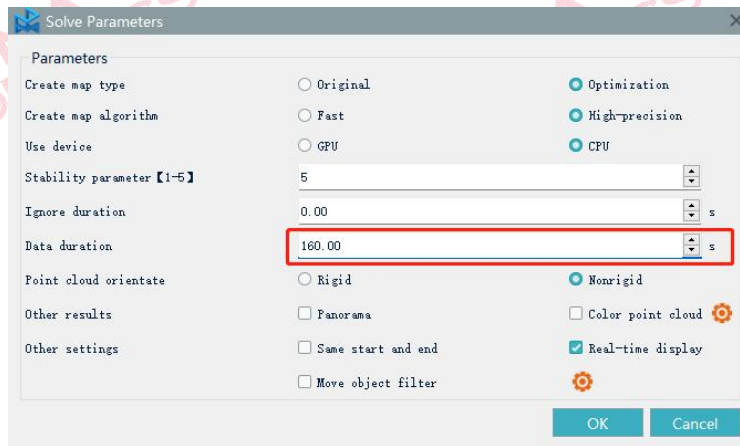


Fig. Calculate the first half of the data parameter Settings

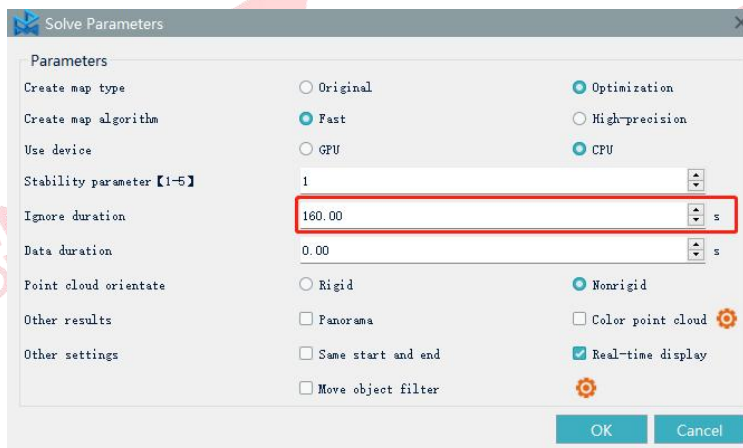
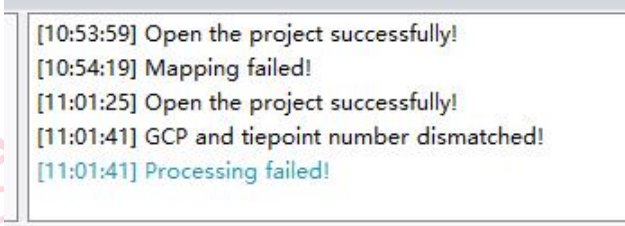


Fig. Solve the second half of the data parameter Settings

5.4 The solution suggests the inconsistent number of control points

If the control point file is imported when the project is created, and when solving the calculation, it prompts "The number of control points and extraction points are not consistent, please edit the control points!" you need to use the control point editing function.



```
[10:53:59] Open the project successfully!
[10:54:19] Mapping failed!
[11:01:25] Open the project successfully!
[11:01:41] GCP and tiepoint number mismatched!
[11:01:41] Processing failed!
```

Fig. Control point not match

Right-click at **[Data Manager] - [Control Point] - [Control Point]** and select **[Edit Control Point]** to enter the control point editing interface.

- 1) When the number of matching points is more than the control points, you can click on the control points to be edited, modify the serial number of the matching points in the upper toolbar, correspond the control points to the correct matching points, and make the redundant matching points empty at the end of the round, which will not participate in any calculation, and check the control points as check points, this point will no longer participate in the directional calculation, and will only be output as a check point in the external conformity accuracy report. After editing the control points, click **Apply**, click **[One-click Solve]** in the data processing toolbar, choose not to replace the existing mapping results, and output the oriented and optimized result data.
- 2) If the number of control points is greater than the number of matching points, the control point file must be edited to delete the redundant control points.
- 3) If the subsequent coordinate conversion uses non-rigid conversion, the control point order must be edited to match the matching point order, and the control point editing function cannot be used.

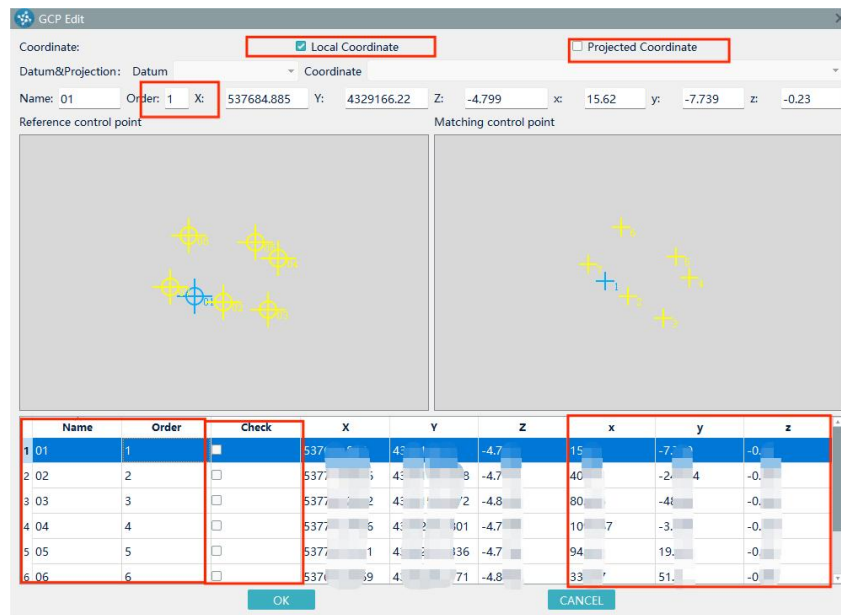


Fig. Control point edit

5.5 The solution prompts a point cloud orientation failure

When using non-rigid transformation, the projection coordinate system is not set when importing control points, set the projection coordinate system in the Edit Control Points screen. If you still fail after setting the projection coordinate system, please contact Feima staff.

5.6 Failed to solve no log in temp folder

If you click one-click solving or point cloud building directly prompts solving failure, there is no display in the real-time window, and there is no corresponding log file in the temp folder, it is because the computer lacks a certain runtime file, please contact Feima staff.

5.7 No change in the progress bar for one-click solve

There is no change in the progress bar at the bottom of the software after clicking One Click Solve or Point Cloud Map, and there is no indication of solving failure. At this time, open the imu file, check whether the last line of the record is complete, if not recorded completely, delete the last line of the record, and then solve the problem again.

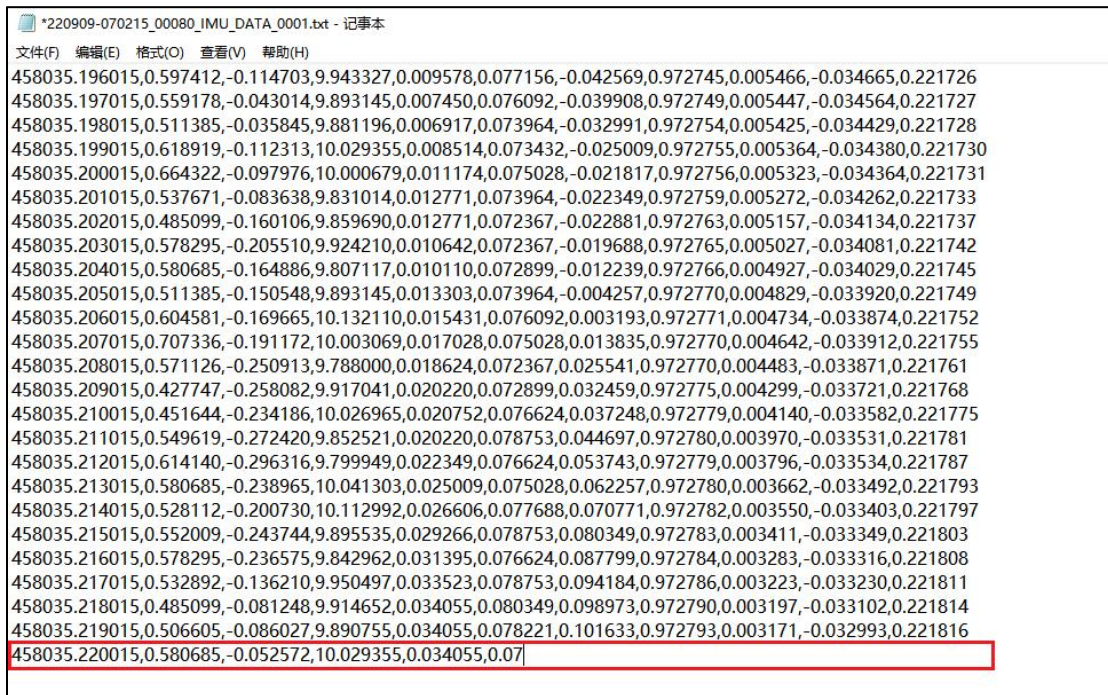


Fig. Imu document record not complete

