



Test Report of Visual Positioning for Oscar Trek

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1 Summarize

This report evaluates the accuracy and reliability of visual positioning in dense point cloud mode for the Oscar Trek system.

1.1 Test Purpose

The purpose of this test is to assess the accuracy and reliability of visual positioning under various environmental conditions.

1.2 Test Object

The test objects include the Oscar Trek hardware and firmware, as detailed below:

Test Objects	Serial Number	Quantity	description	Version
OscarTrek	59844308949	2	Host Hardware	V3.33
	59844308935		Host Firmware	20241230_V1.2.4.40775e
			Parameter Calibration Method	automation

1.3 Test Indicators

The key indicators for this test are:

Accuracy and reliability: Measured through the cumulative distribution of three-dimensional directional errors and the cumulative distribution of external conformity accuracy (RMS).

1.4 Test Process

1. Connect the Oscar Trek to Nuwa via wifi, enable tilt compensation, and config it to rover mode to obtain a fixed solution.

2. Enter the visual positioning interface and use the dense point cloud mode for visual measurements to get the coordinates of the target points.
3. Measure the target points and get the coordinates using a total station.
4. Compare the differences between the coordinates collected by the Oscar Trek and the Total Station.

2 Test Content

The receiver was used to perform visual positioning of distinctive points in dense point cloud mode across three scenarios:

1. Open Sky Environment: An environment with no obstructions, providing optimal satellite visibility and signal reception.

2. Partially Obstructed Sky Environment: Situations where only a portion of the sky is visible, such as near large structures or under tree cover, leading to limited satellite visibility.

3. Suburban Area: Regions with moderate building density and vegetation, causing occasional signal obstructions but generally offering better GNSS performance than urban canyons.

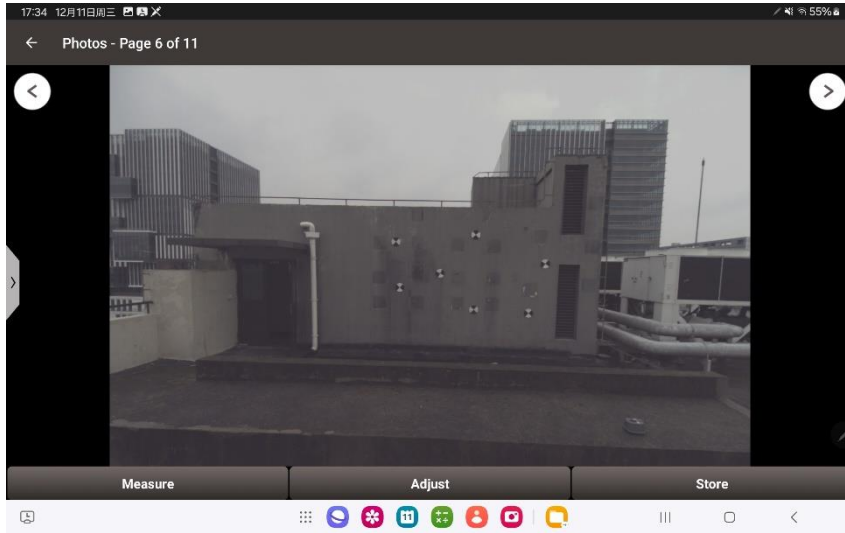
Each scenario was tested at two distances (8-Meters and 10-Meters), with five groups of measurements taken at each distance.

2.1 Open Sky Environment

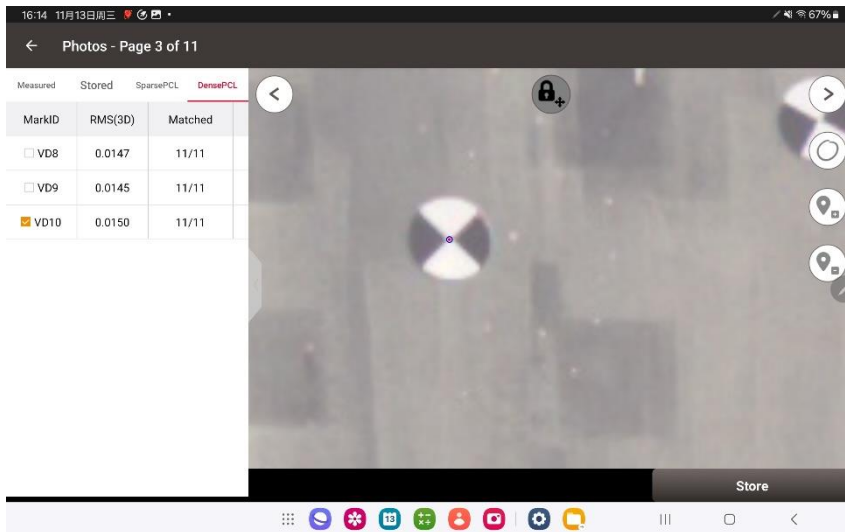
2.1.1 8-Meter Distance

1. Test Environment

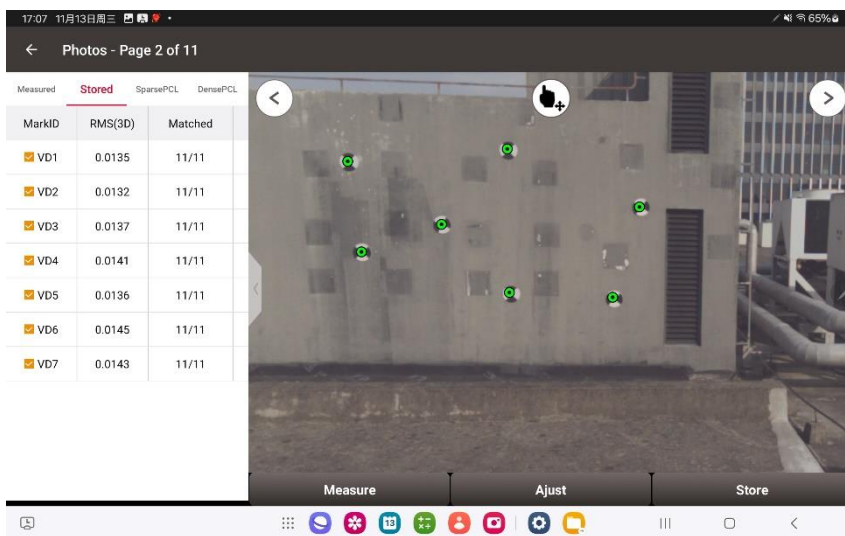
Test Report



2. Test Screen Display



3. Test Point Distribution



4. Error Statistics (Unit: meters)

(1) 59844308949

Point Name	dx	dy	dz
8949-ld-8-1_V01	-0.020	0.000	-0.002
8949-ld-8-1_V02	-0.022	-0.002	-0.004
8949-ld-8-1_V03	-0.029	0.002	-0.003
8949-ld-8-1_V04	-0.012	-0.005	-0.017
8949-ld-8-1_V05	-0.015	-0.003	-0.004
8949-ld-8-1_V06	-0.018	-0.006	-0.003
8949-ld-8-1_V07	-0.030	-0.001	0.000
8949-ld-8-2_V01	0.018	0.005	0.004
8949-ld-8-2_V02	0.008	0.005	-0.006
8949-ld-8-2_V03	0.005	0.011	-0.001
8949-ld-8-2_V04	0.002	0.012	-0.003
8949-ld-8-2_V05	0.013	0.010	0.007
8949-ld-8-2_V06	0.007	0.014	0.006
8949-ld-8-2_V07	0.004	0.014	0.008
8949-ld-8-3_V01	-0.005	0.003	0.005
8949-ld-8-3_V02	-0.004	-0.004	0.005
8949-ld-8-3_V03	-0.002	0.004	0.016
8949-ld-8-3_V04	0.003	0.003	0.008
8949-ld-8-3_V05	-0.005	0.005	0.013
8949-ld-8-3_V06	0.001	0.006	0.011
8949-ld-8-3_V07	-0.005	0.006	0.009
8949-ld-8-4_V01	0.001	-0.006	0.021
8949-ld-8-4_V02	-0.002	-0.008	0.021
8949-ld-8-4_V03	0.007	-0.004	0.015
8949-ld-8-4_V04	0.005	-0.004	0.010
8949-ld-8-4_V05	0.000	-0.004	0.025
8949-ld-8-4_V06	0.002	-0.003	0.013
8949-ld-8-4_V07	-0.003	-0.002	0.019
8949-ld-8-5_V01	0.000	0.012	0.003
8949-ld-8-5_V02	0.005	0.007	0.005
8949-ld-8-5_V03	-0.004	0.016	0.012
8949-ld-8-5_V04	-0.005	0.013	0.011
8949-ld-8-5_V05	0.006	0.011	0.011
8949-ld-8-5_V06	0.000	0.014	0.008
8949-ld-8-5_V07	-0.006	0.016	-0.001

(2) 59844308935

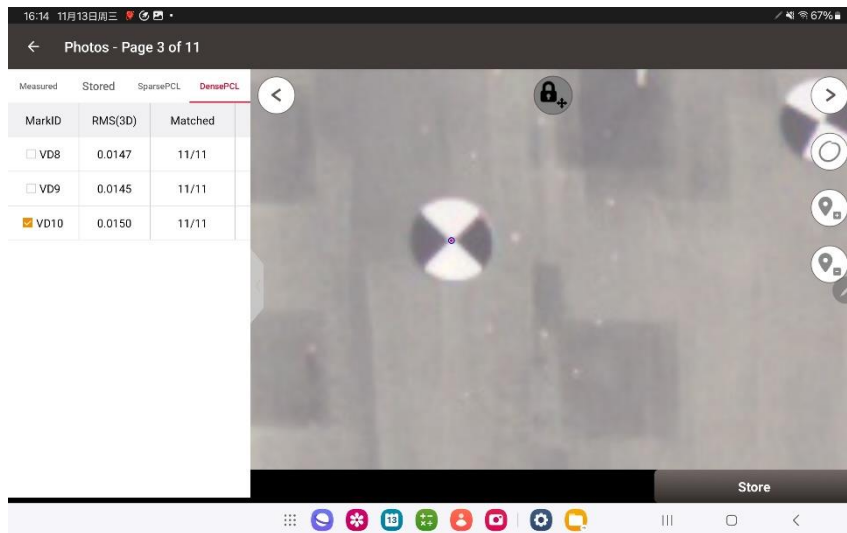
Point Name	dx	dy	dz
8935-ld-8-1_V01	-0.009	-0.001	0.025
8935-ld-8-1_V02	-0.008	-0.005	0.023
8935-ld-8-1_V03	-0.005	-0.004	0.030
8935-ld-8-1_V04	-0.016	0.005	0.018
8935-ld-8-1_V05	-0.018	-0.005	0.031
8935-ld-8-1_V06	-0.017	0.001	0.025
8935-ld-8-1_V07	-0.006	-0.001	0.016
8935-ld-8-2_V01	-0.007	-0.007	0.012
8935-ld-8-2_V02	-0.014	-0.008	0.024
8935-ld-8-2_V03	0.002	-0.003	0.013
8935-ld-8-2_V04	-0.008	-0.004	0.011
8935-ld-8-2_V05	-0.008	-0.002	0.008
8935-ld-8-2_V06	-0.004	0.005	0.006
8935-ld-8-2_V07	0.000	0.003	0.014
8935-ld-8-3_V01	-0.006	-0.001	0.017
8935-ld-8-3_V02	-0.012	-0.005	0.013
8935-ld-8-3_V03	-0.011	0.001	0.011
8935-ld-8-3_V04	-0.009	-0.002	0.009
8935-ld-8-3_V05	-0.018	-0.001	0.004
8935-ld-8-3_V06	-0.019	0.003	0.015
8935-ld-8-3_V07	-0.017	0.000	0.019
8935-ld-8-4_V01	-0.011	0.017	0.009
8935-ld-8-4_V02	-0.012	0.015	0.011
8935-ld-8-4_V03	-0.017	0.020	0.020
8935-ld-8-4_V04	-0.006	0.014	0.001
8935-ld-8-4_V05	-0.013	0.014	0.013
8935-ld-8-4_V06	-0.022	0.021	0.008
8935-ld-8-4_V07	-0.020	0.019	0.009
8935-ld-8-5_V01	0.006	0.001	0.014
8935-ld-8-5_V02	-0.004	0.002	0.018
8935-ld-8-5_V03	0.009	0.005	0.015
8935-ld-8-5_V04	0.008	0.004	0.014
8935-ld-8-5_V05	0.000	0.004	0.021
8935-ld-8-5_V06	0.005	0.010	0.015
8935-ld-8-5_V07	-0.001	0.010	0.022

2.1.2 10-Meter Distance

1. Test Environment

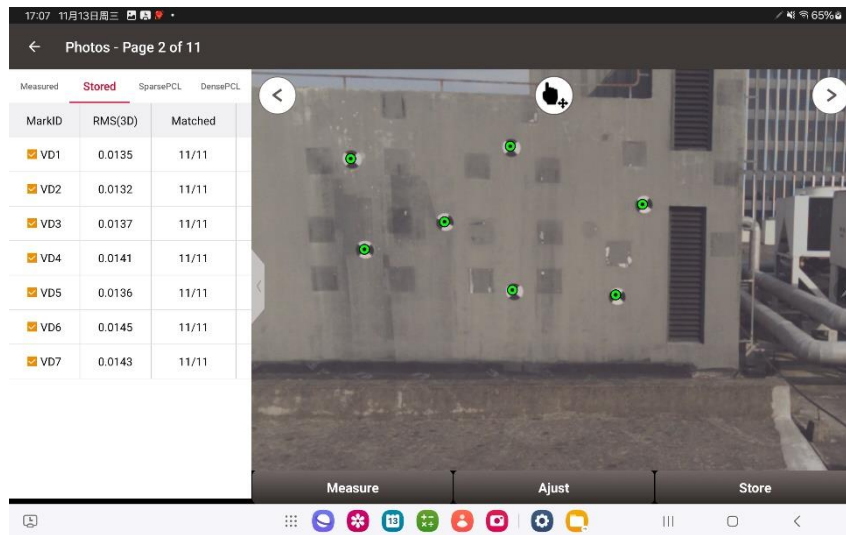


2. Test Screen Display



3. Test Point Distribution

Test Report



4.Error Statistics (Unit: meters)

(1) 59844308949

Test Report

Point Name	dx	dy	dz
8949-ld-10-1_VD1	-0.019	0.012	0.025
8949-ld-10-1_VD2	-0.009	0.005	0.034
8949-ld-10-1_VD3	-0.013	0.011	0.035
8949-ld-10-1_VD4	-0.018	0.010	0.026
8949-ld-10-1_VD5	-0.021	0.008	0.032
8949-ld-10-1_VD6	-0.017	0.010	0.042
8949-ld-10-1_VD7	-0.018	0.006	0.034
8949-ld-10-2_VD1	-0.013	0.005	0.004
8949-ld-10-2_VD2	-0.014	0.002	0.002
8949-ld-10-2_VD3	-0.022	0.006	0.016
8949-ld-10-2_VD4	-0.011	0.002	-0.001
8949-ld-10-2_VD5	-0.019	0.005	0.008
8949-ld-10-2_VD6	-0.027	0.004	0.008
8949-ld-10-2_VD7	-0.015	0.003	0.006
8949-ld-10-3_VD1	-0.027	0.001	0.018
8949-ld-10-3_VD2	-0.030	0.000	0.016
8949-ld-10-3_VD3	-0.031	0.002	0.021
8949-ld-10-3_VD4	-0.036	0.000	0.024
8949-ld-10-3_VD5	-0.034	0.000	0.004
8949-ld-10-3_VD6	-0.035	-0.005	0.011
8949-ld-10-3_VD7	-0.026	-0.006	0.003
8949-ld-10-4_VD1	-0.004	-0.004	0.008
8949-ld-10-4_VD2	-0.009	-0.005	0.005
8949-ld-10-4_VD3	-0.004	-0.002	0.009
8949-ld-10-4_VD4	0.001	-0.004	0.017
8949-ld-10-4_VD5	-0.005	-0.004	0.001
8949-ld-10-4_VD6	-0.003	-0.002	0.012
8949-ld-10-4_VD7	-0.003	-0.005	0.014
8949-ld-10-5_VD1	0.005	-0.005	0.010
8949-ld-10-5_VD2	-0.001	-0.006	0.009
8949-ld-10-5_VD3	-0.002	0.001	0.013
8949-ld-10-5_VD4	-0.001	-0.004	0.006
8949-ld-10-5_VD5	0.004	-0.003	0.010
8949-ld-10-5_VD6	-0.002	-0.004	0.013
8949-ld-10-5_VD7	0.007	-0.009	0.008

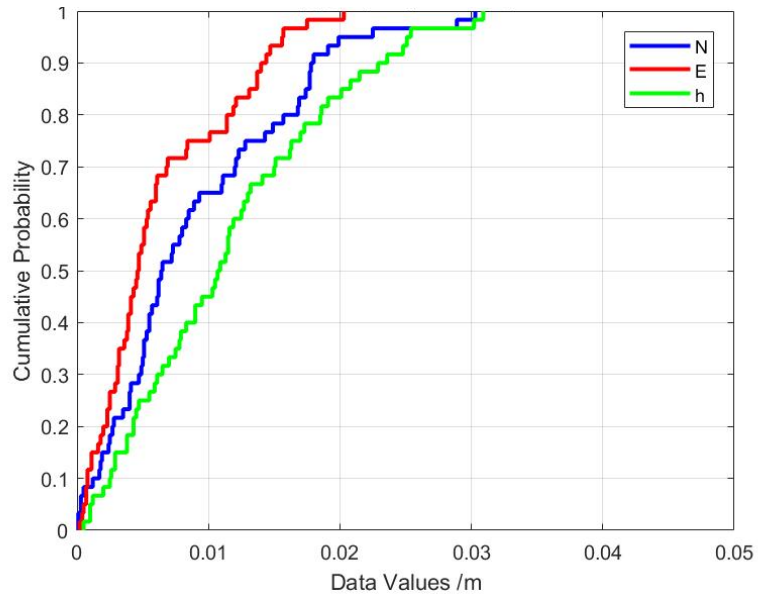
(2) 59844308935

Point Name	dx	dy	dz
8935-ld-10-1_VD1	-0.023	-0.011	0.021
8935-ld-10-1_VD2	-0.024	-0.017	0.009
8935-ld-10-1_VD3	-0.023	-0.014	0.024
8935-ld-10-1_VD4	-0.022	-0.016	0.029
8935-ld-10-1_VD5	-0.006	-0.019	0.020
8935-ld-10-1_VD6	-0.016	-0.018	0.021
8935-ld-10-1_VD7	-0.009	-0.017	0.022
8935-ld-10-3_VD1	-0.007	-0.032	0.001
8935-ld-10-3_VD2	-0.001	-0.031	0.003
8935-ld-10-3_VD3	-0.003	-0.027	0.020
8935-ld-10-3_VD4	0.002	-0.029	0.016
8935-ld-10-3_VD5	-0.002	-0.029	0.007
8935-ld-10-3_VD6	0.014	-0.031	0.024
8935-ld-10-3_VD7	0.013	-0.024	0.016
8935-ld-10-4_VD1	-0.029	-0.026	0.014
8935-ld-10-4_VD2	-0.026	-0.026	0.010
8935-ld-10-4_VD3	-0.026	-0.028	0.024
8935-ld-10-4_VD4	-0.030	-0.031	0.021
8935-ld-10-4_VD5	-0.022	-0.030	0.007
8935-ld-10-4_VD6	-0.025	-0.034	0.012
8935-ld-10-4_VD7	-0.019	-0.033	0.016
8935-ld-10-5_VD1	-0.036	0.011	0.021
8935-ld-10-5_VD2	-0.026	0.008	0.008
8935-ld-10-5_VD3	-0.023	0.006	0.016
8935-ld-10-5_VD4	-0.023	0.002	0.013
8935-ld-10-5_VD5	-0.015	0.005	0.003
8935-ld-10-5_VD6	-0.018	0.001	0.026
8935-ld-10-5_VD7	-0.021	0.001	0.014
8935-ld-10-2_VD1	-0.018	-0.013	0.023
8935-ld-10-2_VD2	-0.017	-0.014	0.023
8935-ld-10-2_VD3	-0.008	-0.016	0.022
8935-ld-10-2_VD4	-0.007	-0.017	0.018
8935-ld-10-2_VD5	-0.004	-0.023	0.012
8935-ld-10-2_VD6	-0.003	-0.019	0.031
8935-ld-10-2_VD7	0.003	-0.019	0.019

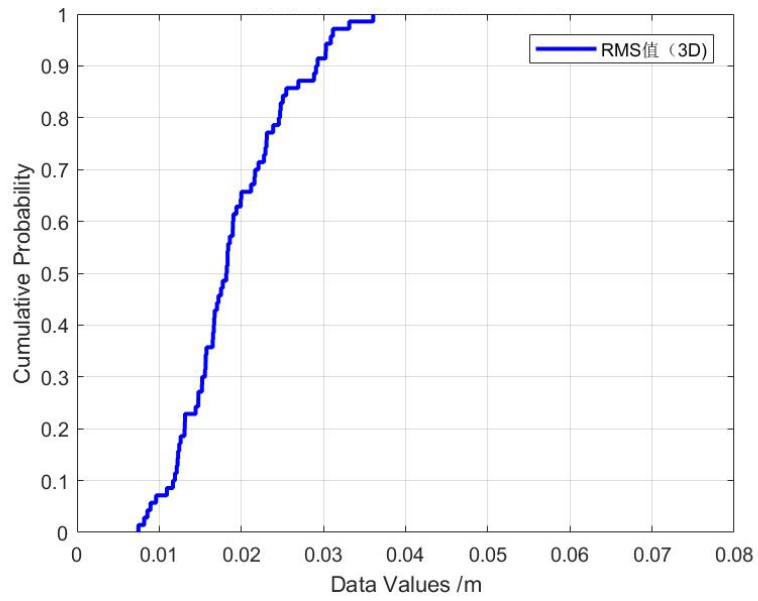
2.1.3 Accuracy and Reliability Statistics

8-Meter Distance

(1) Cumulative Distribution of 3D Directional Errors

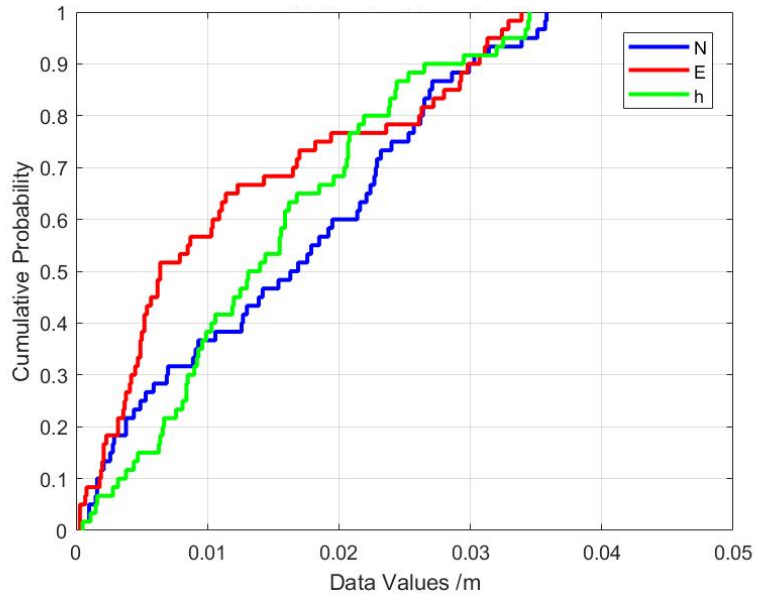


(2) Cumulative Distribution of External Conformity Accuracy(RMS):

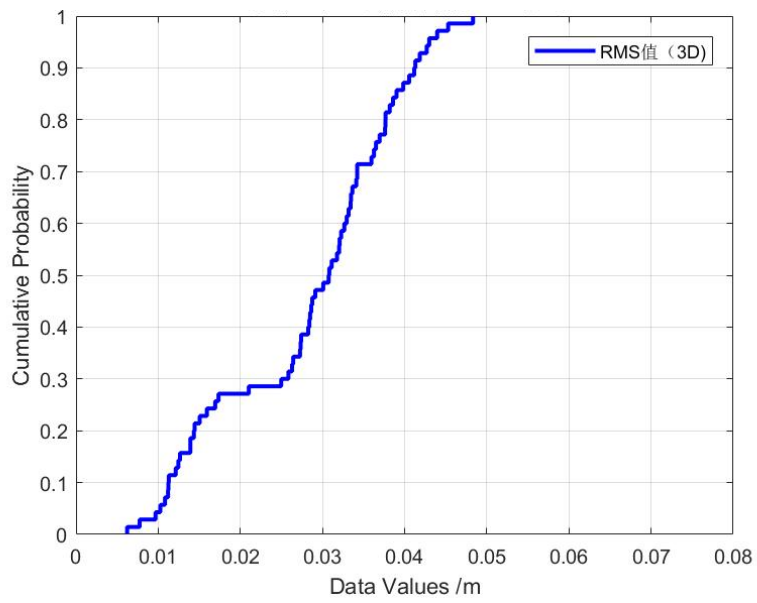


10-Meter Distance

(1) Cumulative Distribution of 3D Directional Errors:



(2) Cumulative Distribution of External Conformity Accuracy(RMS)



2.1 Partially Obstructed Sky Environment

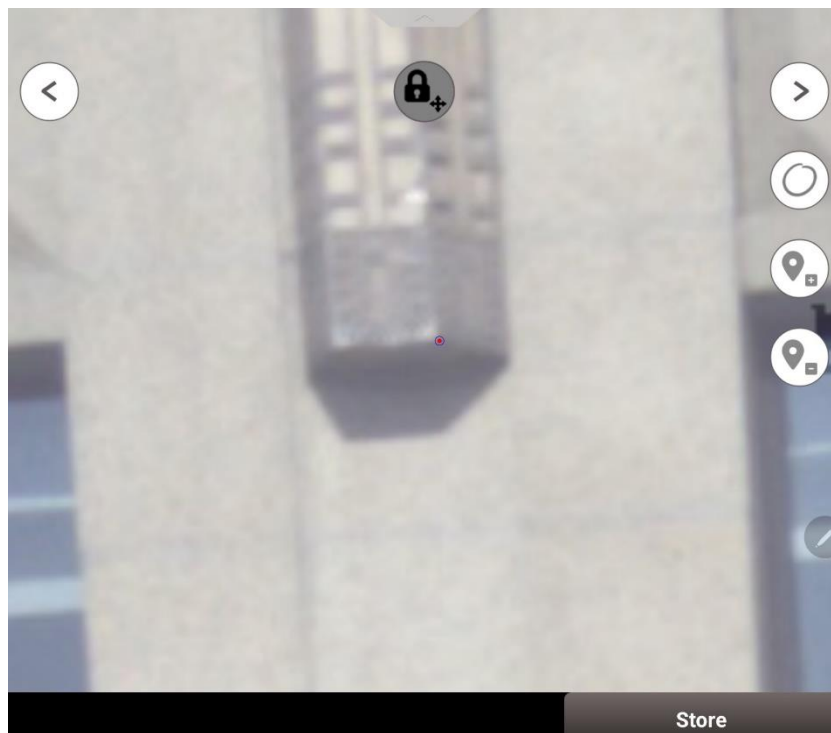
2.1.1 8-Meter Distance

1. Test Environment

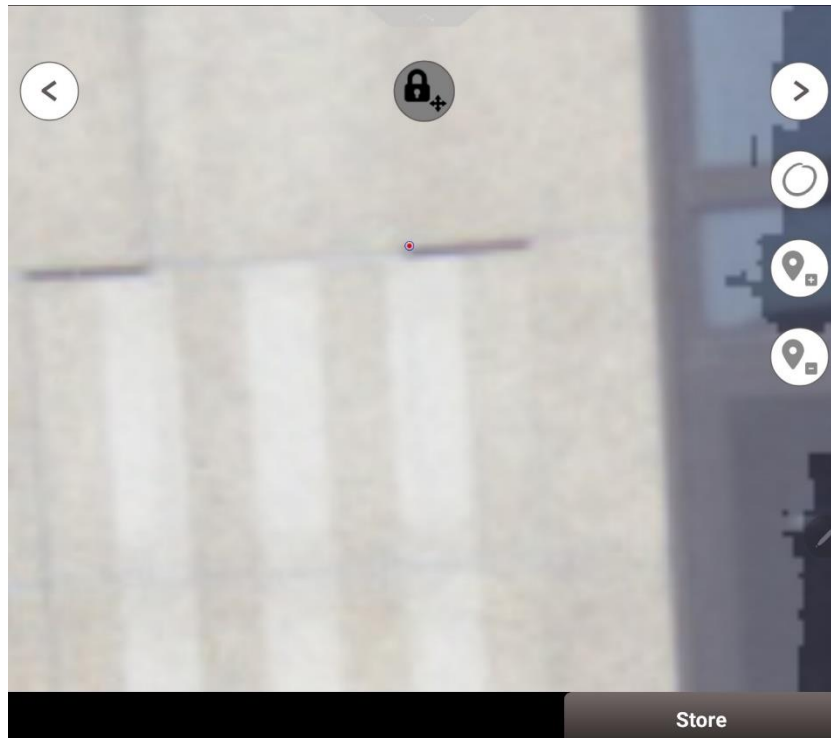


2. Test Screen Display

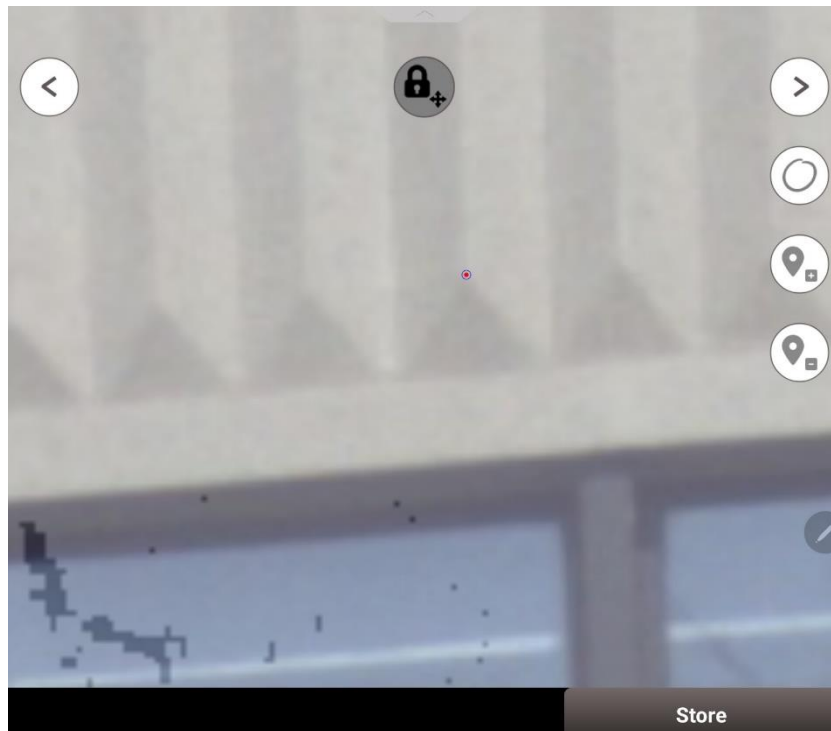
(1) Point 1



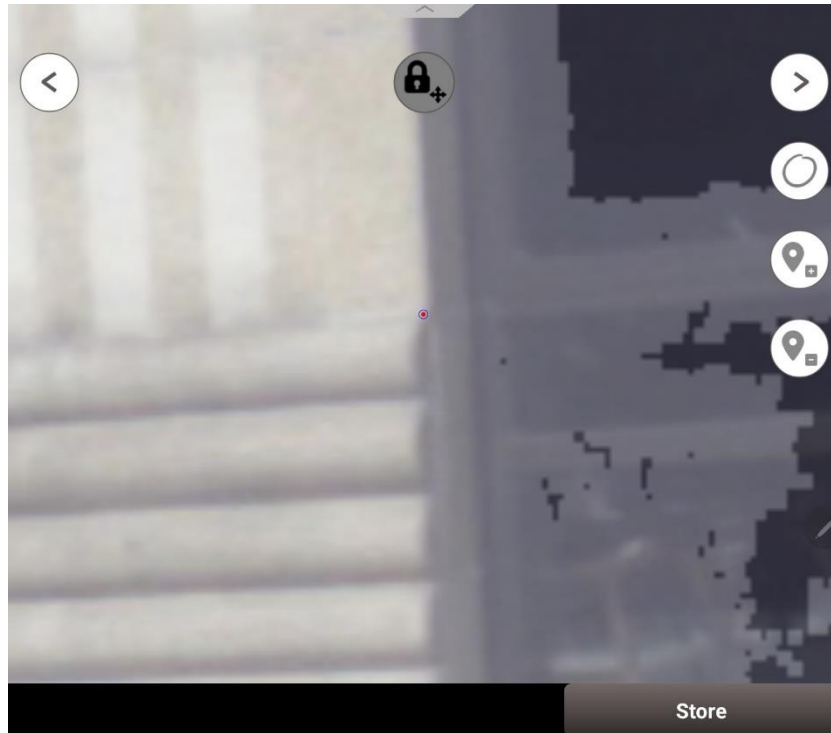
(2) Point 2



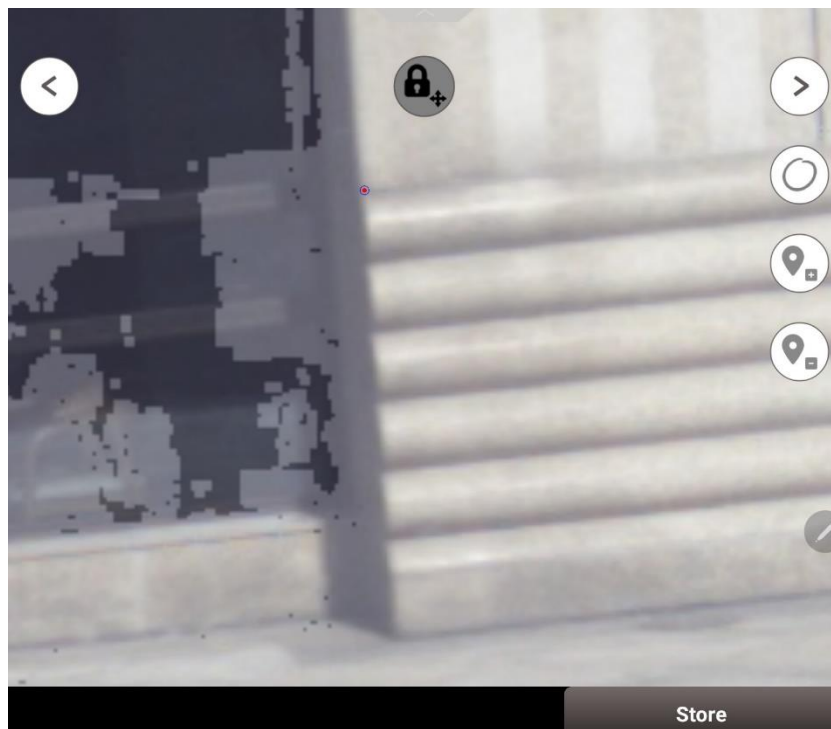
(3) Point 3



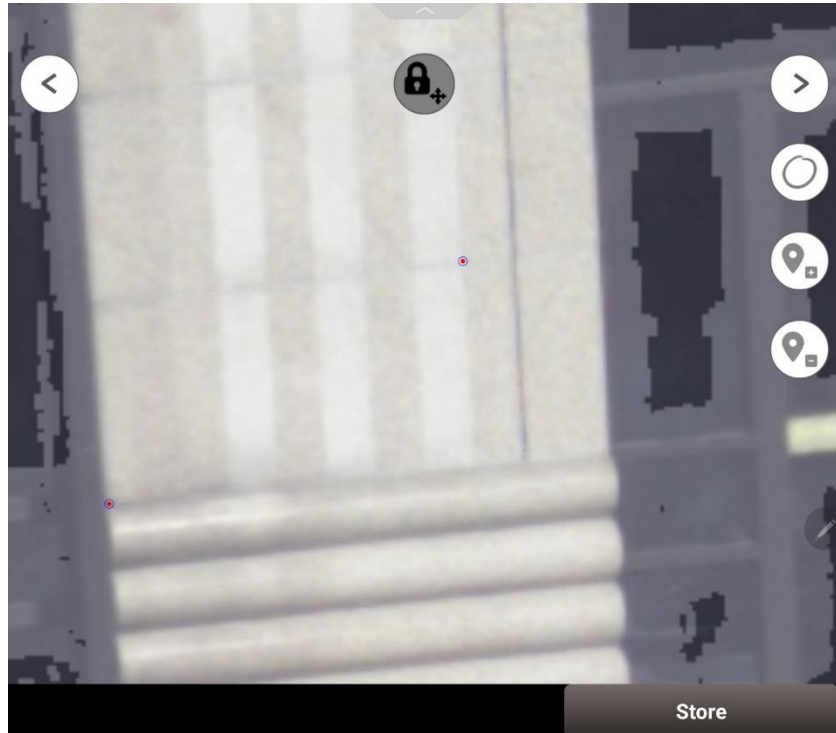
(4) Point 4



(5) Point 5



(6) Point 6



3. Test Point Distribution



4. Error Statistics (Unit: meters)

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Test Report

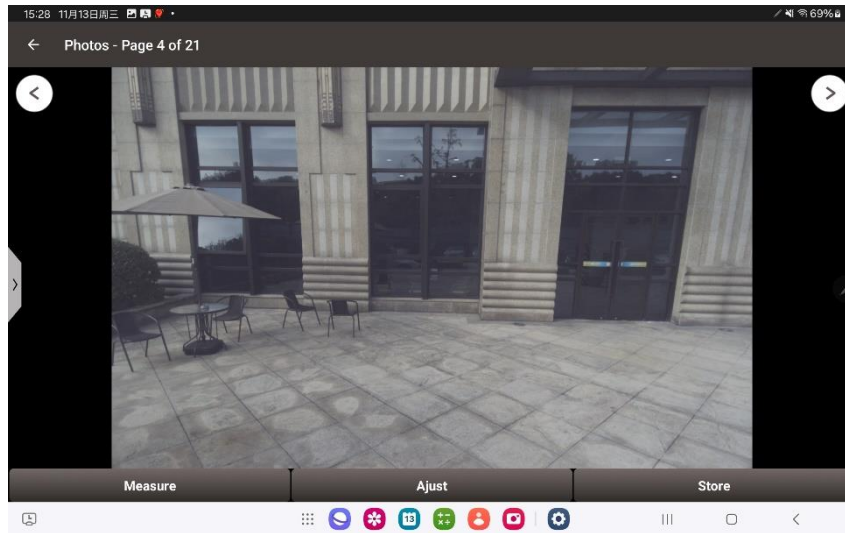
Point Name	dx	dy	dz
8m-1_V01	-0.007	-0.040	0.021
8m-1_V02	-0.002	-0.049	0.018
8m-1_V03	0.010	-0.047	-0.003
8m-1_V04	0.006	-0.035	0.042
8m-1_V05	-0.009	-0.047	-0.001
8m-1_V06	0.004	-0.039	0.008
8m-2_V01	-0.016	-0.021	0.019
8m-2_V02	-0.009	-0.033	0.019
8m-2_V03	-0.008	-0.031	0.014
8m-2_V04	-0.016	-0.020	0.038
8m-2_V05	-0.017	-0.034	0.021
8m-2_V06	-0.011	-0.035	0.037
8m-3_V01	0.001	-0.018	0.006
8m-3_V02	0.007	-0.027	0.005
8m-3_V03	0.009	-0.035	0.001
8m-3_V04	0.018	-0.014	0.039
8m-3_V05	-0.013	-0.021	0.015
8m-3_V06	0.007	-0.033	0.023
8m-4_V01	-0.003	-0.015	0.006
8m-4_V02	0.012	-0.011	0.007
8m-4_V03	0.009	-0.012	-0.001
8m-4_V04	0.005	-0.007	0.032
8m-4_V05	0.002	-0.015	-0.015
8m-4_V06	-0.001	-0.014	0.018
8m-5_V01	-0.001	-0.011	0.008
8m-5_V02	0.017	-0.007	0.000
8m-5_V03	0.013	-0.017	0.001
8m-5_V04	0.012	-0.008	0.016
8m-5_V05	-0.004	-0.018	-0.004
8m-5_V06	0.009	-0.021	0.015

(2) 59844308935

Point Name	dx	dy	dz
8935-lm-8-1_V01	0.005	-0.004	0.007
8935-lm-8-1_V02	0.013	0.001	0.014
8935-lm-8-1_V03	0.007	-0.009	0.004
8935-lm-8-1_V04	0.007	0.001	0.026
8935-lm-8-1_V05	-0.021	-0.008	0.011
8935-lm-8-1_V06	-0.005	-0.006	0.023
8935-lm-8-2_V01	0.019	-0.009	-0.001
8935-lm-8-2_V02	0.029	0.000	0.004
8935-lm-8-2_V03	0.016	-0.016	-0.005
8935-lm-8-2_V04	0.021	-0.002	0.032
8935-lm-8-2_V05	0.010	-0.006	-0.001
8935-lm-8-2_V06	0.012	-0.008	0.020
8935-lm-8-3_V01	0.008	-0.010	0.013
8935-lm-8-3_V02	0.013	-0.003	0.014
8935-lm-8-3_V03	0.003	-0.018	0.009
8935-lm-8-3_V04	0.012	0.008	0.032
8935-lm-8-3_V05	-0.026	-0.012	0.012
8935-lm-8-3_V06	-0.005	0.002	0.028
8935-lm-8-4_V01	0.008	-0.027	0.002
8935-lm-8-4_V02	0.022	-0.022	0.007
8935-lm-8-4_V03	0.022	-0.030	0.003
8935-lm-8-4_V04	0.016	-0.022	0.023
8935-lm-8-4_V05	-0.001	-0.025	-0.002
8935-lm-8-4_V06	0.012	-0.015	0.022
8935-lm-8-5_V01	-0.006	-0.022	0.002
8935-lm-8-5_V02	0.006	-0.021	0.009
8935-lm-8-5_V03	0.008	-0.031	0.000
8935-lm-8-5_V04	-0.013	-0.017	0.024
8935-lm-8-5_V05	-0.024	-0.012	0.000
8935-lm-8-5_V06	-0.007	-0.026	0.013

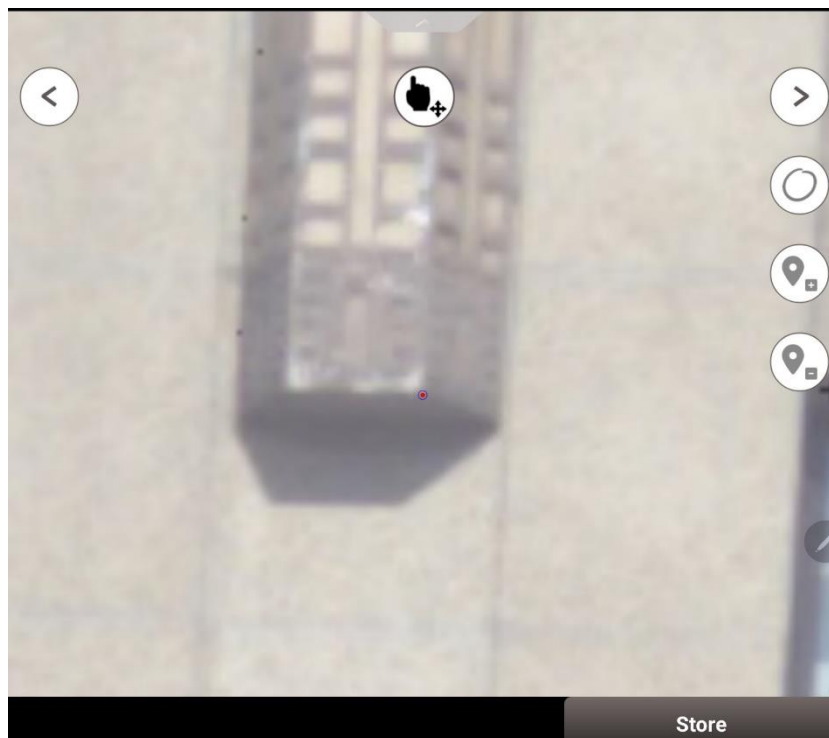
2.1.2 10-Meter Distance

1. Test Environment

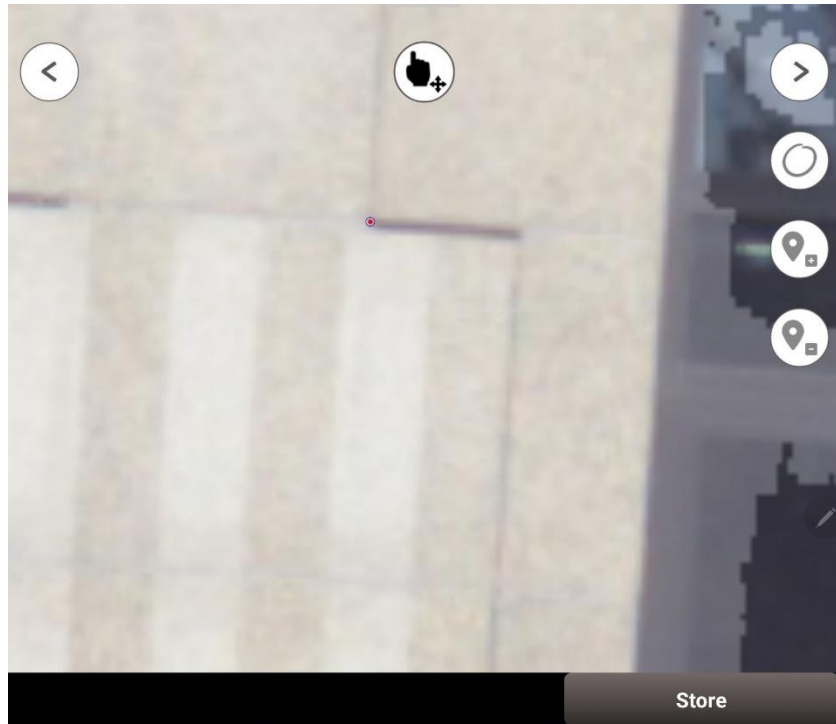


2. Test Screen Display

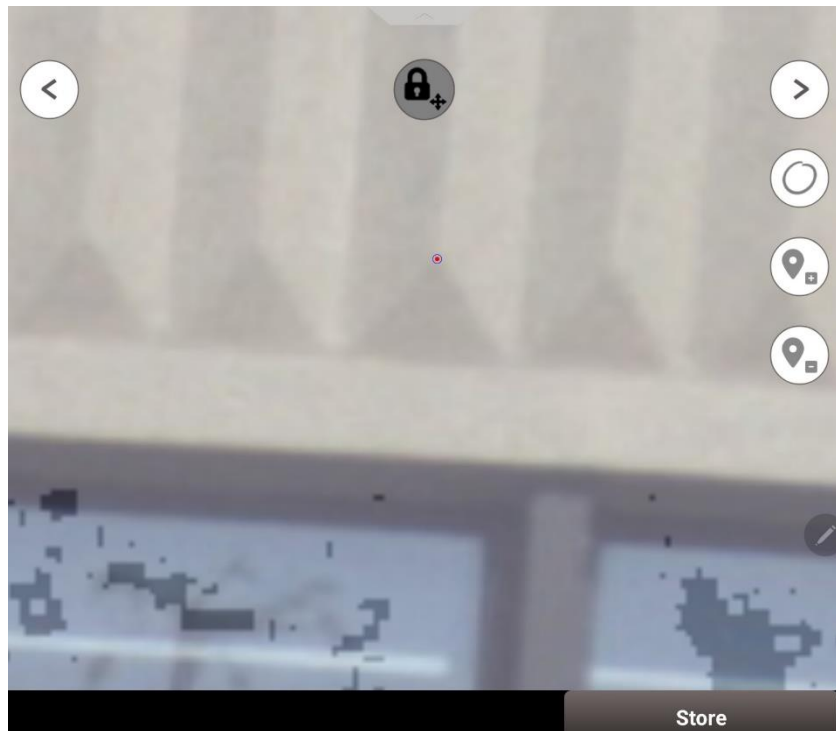
(1) Point 1



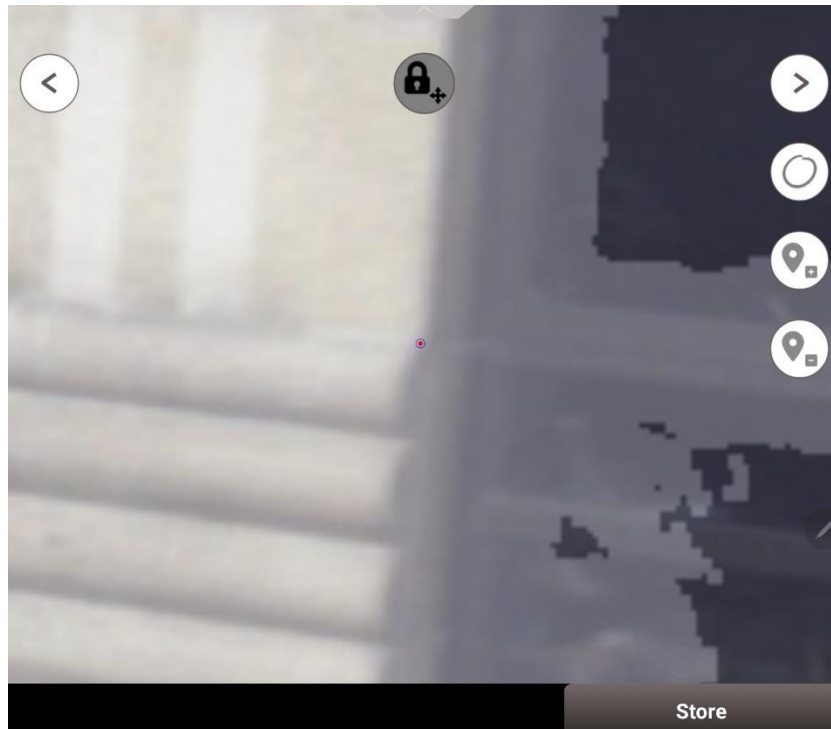
(2) Point 2



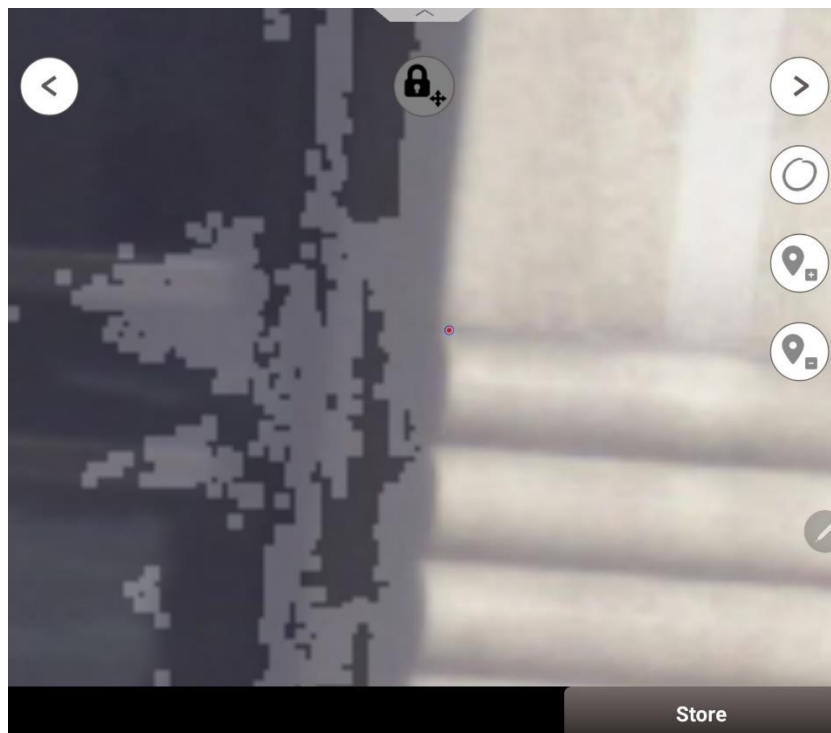
(3) Point 3



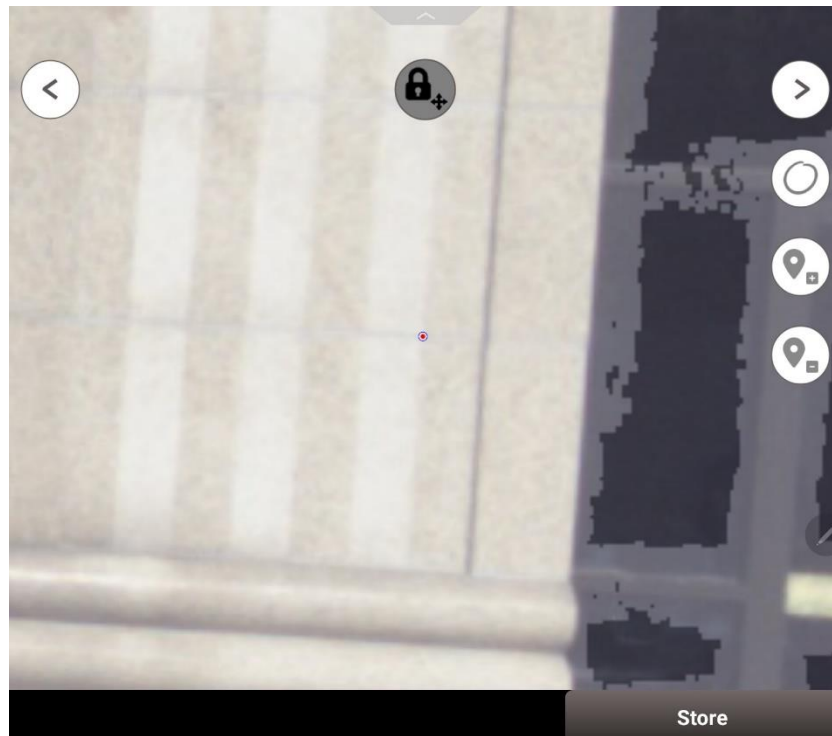
(4) Point 4



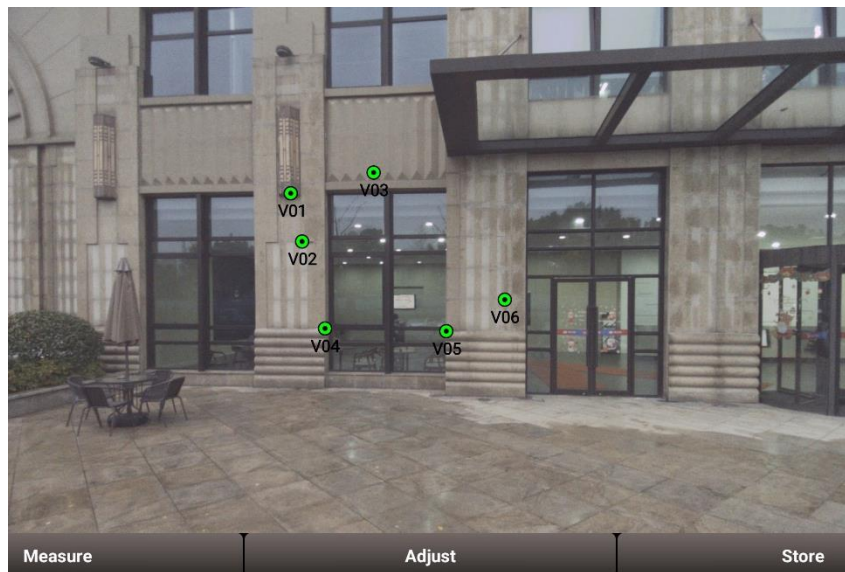
(5) Point 5



(6) Point 6



3. Test Point Distribution



4. Error Statistics (Unit: meters)

(1) 59844308949

Test Report

Point Name	dx	dy	dz
10m-1_V01	-0.034	-0.027	-0.001
10m-1_V02	-0.018	-0.023	-0.009
10m-1_V03	-0.019	-0.041	-0.013
10m-1_V04	-0.032	-0.025	0.022
10m-1_V05	-0.044	-0.030	-0.002
10m-1_V06	-0.027	-0.036	-0.006
10m-2_V01	-0.034	-0.018	0.009
10m-2_V02	-0.011	-0.036	0.014
10m-2_V03	-0.023	-0.015	0.011
10m-2_V04	-0.030	-0.016	0.031
10m-2_V05	-0.049	-0.030	0.002
10m-2_V06	-0.030	-0.007	0.031
10m-3_V01	-0.013	-0.027	0.020
10m-3_V02	0.003	-0.004	0.014
10m-3_V03	-0.009	-0.028	0.020
10m-3_V04	0.000	-0.017	0.040
10m-3_V05	-0.029	-0.019	0.017
10m-3_V06	-0.007	-0.014	0.028
10m-5_V01	0.015	-0.015	0.014
10m-5_V02	0.029	-0.014	0.014
10m-5_V03	0.022	-0.015	0.006
10m-5_V04	0.022	-0.007	0.038
10m-5_V05	0.012	-0.021	0.010
10m-5_V06	0.009	-0.018	0.021
10m-4_V01	0.013	0.003	0.024
10m-4_V02	0.021	-0.008	0.031
10m-4_V03	0.019	-0.002	0.021
10m-4_V04	0.023	-0.007	0.037
10m-4_V05	0.001	0.021	0.005
10m-4_V06	0.009	0.011	0.029

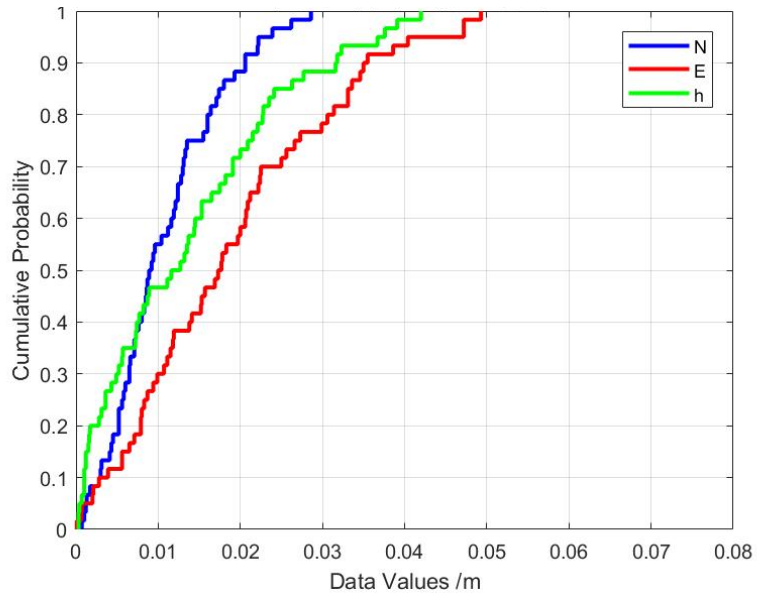
(2) 59844308935

Point Name	dx	dy	dz
8935-lm-10-1_V01	0.013	-0.030	0.034
8935-lm-10-1_V02	0.024	-0.027	0.036
8935-lm-10-1_V03	0.016	-0.038	0.038
8935-lm-10-1_V04	0.018	-0.028	0.041
8935-lm-10-1_V05	-0.005	-0.018	0.011
8935-lm-10-1_V06	0.020	-0.008	0.038
8935-lm-10-2_V01	-0.013	-0.018	0.010
8935-lm-10-2_V02	0.008	-0.018	0.012
8935-lm-10-2_V03	0.013	-0.026	0.008
8935-lm-10-2_V04	-0.004	-0.016	0.035
8935-lm-10-2_V05	-0.019	-0.012	0.010
8935-lm-10-2_V06	0.001	-0.010	0.019
8935-lm-10-3_V01	0.000	-0.041	-0.010
8935-lm-10-3_V02	0.006	-0.033	-0.009
8935-lm-10-3_V03	0.001	-0.050	-0.013
8935-lm-10-3_V04	-0.014	-0.020	0.018
8935-lm-10-3_V05	-0.024	-0.024	0.005
8935-lm-10-3_V06	0.001	-0.022	0.017
8935-lm-10-4_V01	-0.033	0.009	0.007
8935-lm-10-4_V02	-0.026	-0.003	0.026
8935-lm-10-4_V03	-0.027	-0.010	-0.002
8935-lm-10-4_V04	-0.021	0.002	0.041
8935-lm-10-4_V05	-0.026	-0.016	0.008
8935-lm-10-4_V06	-0.031	-0.029	0.027
8935-lm-10-5_V01	-0.012	-0.027	0.007
8935-lm-10-5_V02	0.002	-0.029	0.010
8935-lm-10-5_V03	-0.001	-0.031	-0.001
8935-lm-10-5_V04	0.007	-0.023	0.038
8935-lm-10-5_V05	-0.035	-0.024	0.008
8935-lm-10-5_V06	-0.006	-0.024	0.020

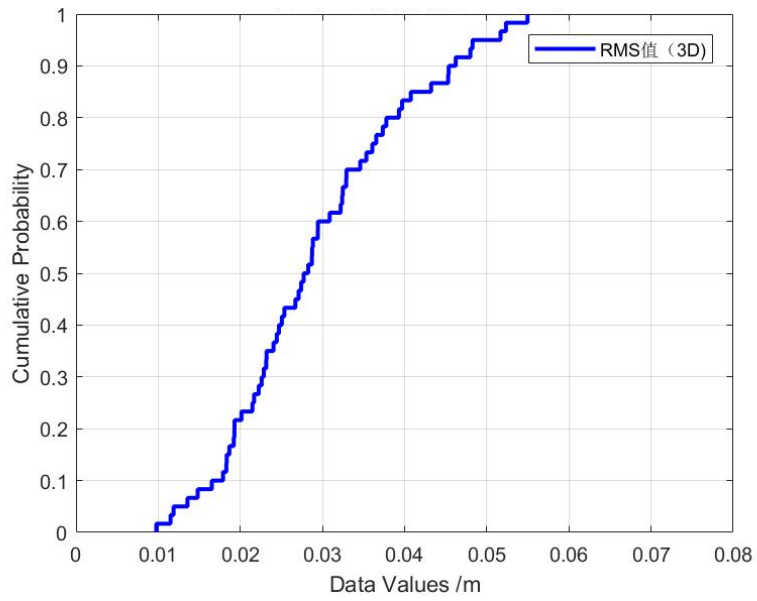
2.1.3 Accuracy and Reliability Statistics

8-Meter Distance

- (1) Cumulative Distribution of 3D Directional Errors:

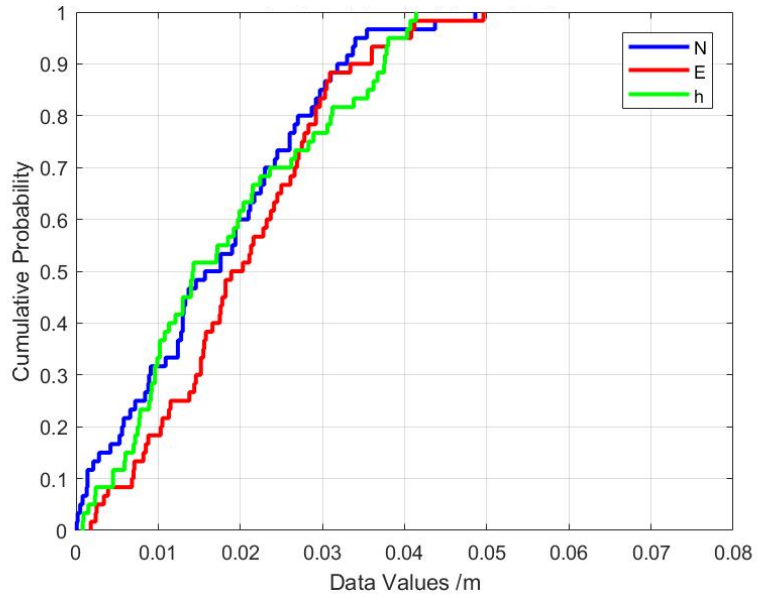


(2) Cumulative Distribution of External Conformity Accuracy(RMS):

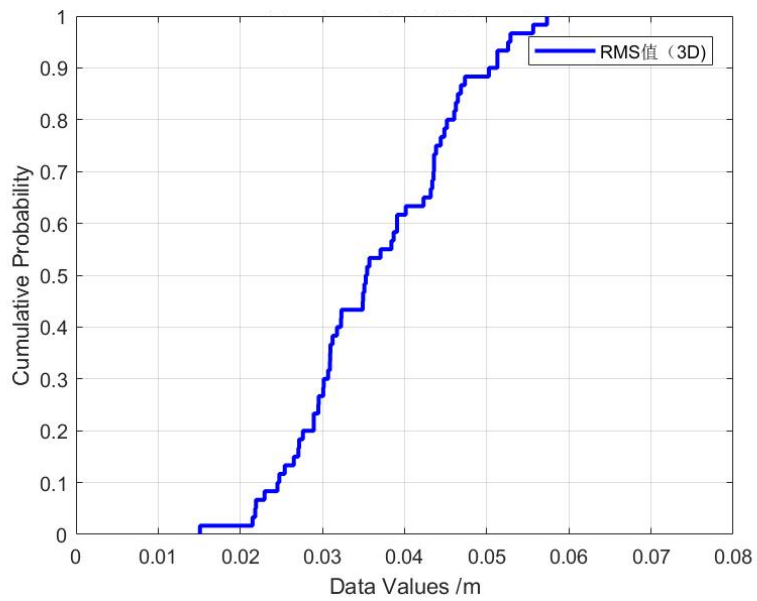


10-Meter Distance

(1) Cumulative Distribution of 3D Directional Errors:



(2) Cumulative Distribution of External Conformity Accuracy(RMS):



2.2 Suburban Area

2.2.1 8-Meter Distance

1. Test Environment



2. Test Screen Display

(1) Point 1 and 2



(2) Point 3 and 4



(3) Point 5



3. Test Point Distribution



4.Error Statistics(Unit: meters)

(1) 59844308949

Test Report

Point Name	dx	dy	dz
8949-8-1_VD1	0.015	-0.009	-0.015
8949-8-1_VD2	0.015	-0.008	-0.015
8949-8-1_VD3	-0.003	-0.050	0.001
8949-8-1_VD4	0.004	0.008	0.004
8949-8-1_VD5	0.034	-0.023	-0.019
8949-8-2_VD1	-0.005	0.005	-0.012
8949-8-2_VD2	-0.009	0.007	-0.019
8949-8-2_VD3	-0.013	-0.018	-0.004
8949-8-2_VD4	-0.013	0.023	-0.002
8949-8-2_VD5	0.011	0.016	-0.029
8949-8-3_VD1	0.046	-0.031	-0.013
8949-8-3_VD2	0.030	-0.024	-0.015
8949-8-3_VD3	0.038	-0.016	-0.008
8949-8-3_VD4	0.045	0.035	-0.002
8949-8-3_VD5	0.072	0.005	-0.027
8949-8-4_VD1	0.028	-0.007	0.007
8949-8-4_VD2	0.017	-0.009	-0.004
8949-8-4_VD3	0.010	-0.013	0.004
8949-8-4_VD4	0.013	-0.006	0.008
8949-8-4_VD5	0.041	-0.020	-0.015
8949-8-5_VD1	0.008	0.001	0.002
8949-8-5_VD2	0.002	0.005	0.000
8949-8-5_VD3	0.004	-0.016	0.003
8949-8-5_VD4	-0.011	-0.031	0.004
8949-8-5_VD5	0.014	-0.026	-0.018

(1) 59844308935

Point Name	dx	dy	dz
8935-park-8m-1_VD1	0.013	0.016	0.028
8935-park-8m-1_VD2	0.012	0.012	0.019
8935-park-8m-1_VD3	-0.005	-0.032	0.024
8935-park-8m-1_VD4	-0.002	-0.035	0.027
8935-park-8m-1_VD5	0.019	-0.033	0.004
8935-park-8m-2_VD1	0.016	0.019	0.022
8935-park-8m-2_VD2	0.013	0.025	0.008
8935-park-8m-2_VD3	0.003	-0.002	0.020
8935-park-8m-2_VD4	-0.003	-0.004	0.024
8935-park-8m-2_VD5	0.008	-0.038	-0.003
8935-park-8m-3_VD2	0.011	0.025	-0.001
8935-park-8m-3_VD3	0.004	0.020	-0.004
8935-park-8m-3_VD4	-0.015	-0.032	0.010
8935-park-8m-3_VD5	-0.012	0.006	0.014
8935-park-8m-3_VD6	0.024	-0.012	-0.001
8935-park-8m-4_VD1	0.008	0.026	0.019
8935-park-8m-4_VD2	0.001	0.011	0.000
8935-park-8m-4_VD3	-0.010	-0.032	0.008
8935-park-8m-4_VD4	-0.019	-0.039	0.012
8935-park-8m-4_VD5	0.009	-0.043	-0.011
8935-park-8m-5_VD1	0.035	0.001	0.008
8935-park-8m-5_VD2	0.031	0.007	-0.005
8935-park-8m-5_VD3	0.021	-0.026	0.011
8935-park-8m-5_VD4	0.020	0.002	0.016
8935-park-8m-5_VD5	0.043	-0.040	-0.002

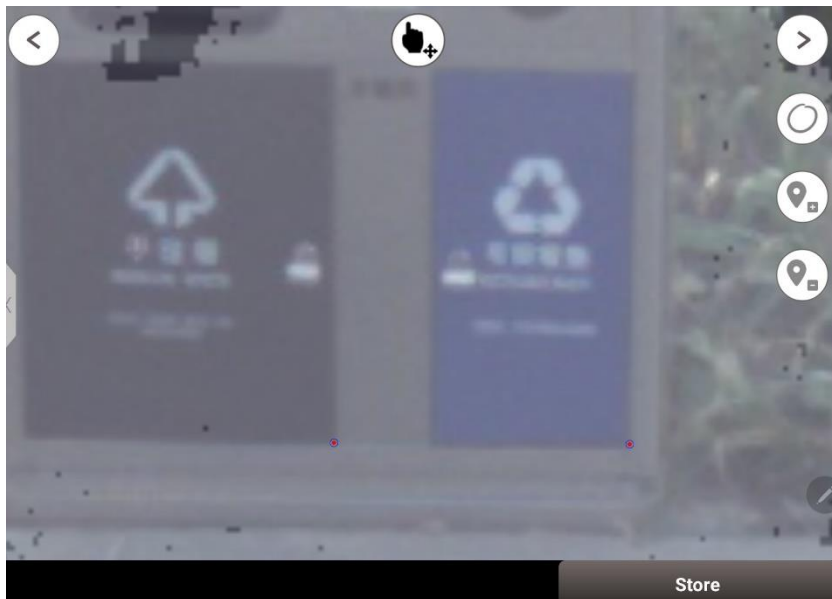
2.2.2 10-Meter Distance

1. Test Environment



2. Test Screen Display

(1) Point 1 and 2



(2) Point 3 and 4



(3) Point 5



3. Test Point Distribution



4.Error Statistics (Unit: meters)

(1) 59844308949

Point Name	dx	dy	dz
8949-10-1_VD1	0.019	0.015	0.003
8949-10-1_VD2	0.000	0.025	-0.017
8949-10-1_VD3	0.009	0.018	-0.002
8949-10-1_VD4	0.002	0.039	0.001
8949-10-1_VD5	0.002	-0.039	-0.024
8949-10-2_VD1	-0.028	0.010	0.000
8949-10-2_VD2	-0.032	0.018	-0.008
8949-10-2_VD3	-0.032	0.002	-0.004
8949-10-2_VD4	-0.037	0.029	0.002
8949-10-2_VD5	-0.009	-0.002	-0.024
8949-10-4_VD1	0.019	-0.001	0.013
8949-10-4_VD2	0.008	0.007	-0.001
8949-10-4_VD3	0.002	-0.046	0.014
8949-10-4_VD4	0.016	0.019	0.019
8949-10-4_VD5	0.039	0.031	-0.007
8949-10-5_VD1	0.010	0.022	0.007
8949-10-5_VD2	0.000	0.027	-0.003
8949-10-5_VD3	-0.006	-0.020	-0.004
8949-10-5_VD4	-0.003	0.030	-0.001
8949-10-5_VD5	-0.004	-0.062	-0.026
8949-10-3_VD1	0.003	0.008	0.009
8949-10-3_VD2	-0.002	0.008	-0.016
8949-10-3_VD3	-0.014	-0.034	-0.001
8949-10-3_VD4	-0.011	-0.005	-0.002
8949-10-3_VD5	-0.002	-0.044	-0.027

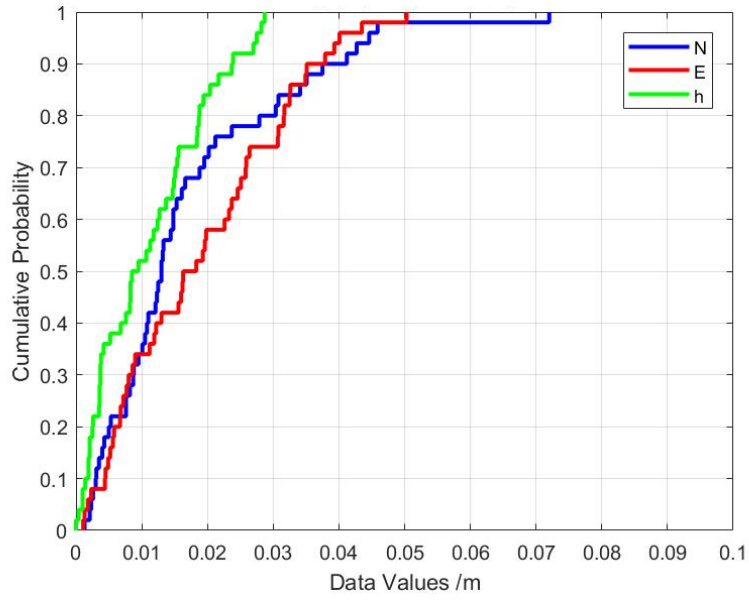
(2) 59844308935

Point Name	dx	dy	dz
8935-park-10m-1_VD1	0.031	0.040	0.007
8935-park-10m-1_VD2	0.020	0.031	-0.011
8935-park-10m-1_VD3	-0.003	-0.020	0.004
8935-park-10m-1_VD4	-0.007	0.003	0.012
8935-park-10m-1_VD5	0.010	-0.008	-0.020
8935-park-10m-2_VD1	-0.008	0.035	-0.005
8935-park-10m-2_VD2	-0.008	0.025	-0.012
8935-park-10m-2_VD3	-0.041	-0.028	-0.003
8935-park-10m-2_VD4	-0.030	-0.004	0.002
8935-park-10m-2_VD5	-0.026	-0.083	-0.021
8935-park-10m-3_VD1	0.016	0.000	-0.005
8935-park-10m-3_VD2	0.018	-0.030	-0.012
8935-park-10m-3_VD3	0.008	-0.001	-0.006
8935-park-10m-3_VD4	0.001	-0.033	-0.003
8935-park-10m-3_VD5	0.042	-0.063	-0.023
8935-park-10m-4_VD1	-0.016	0.022	-0.002
8935-park-10m-4_VD2	-0.019	0.014	-0.009
8935-park-10m-4_VD3	-0.017	0.026	-0.003
8935-park-10m-4_VD4	-0.020	0.026	0.002
8935-park-10m-4_VD5	-0.012	-0.051	-0.022
8935-park-10m-5_VD1	0.010	0.027	-0.010
8935-park-10m-5_VD2	0.001	0.002	-0.018
8935-park-10m-5_VD3	-0.015	-0.043	-0.002
8935-park-10m-5_VD4	0.005	0.035	-0.005
8935-park-10m-5_VD5	0.033	-0.029	-0.026

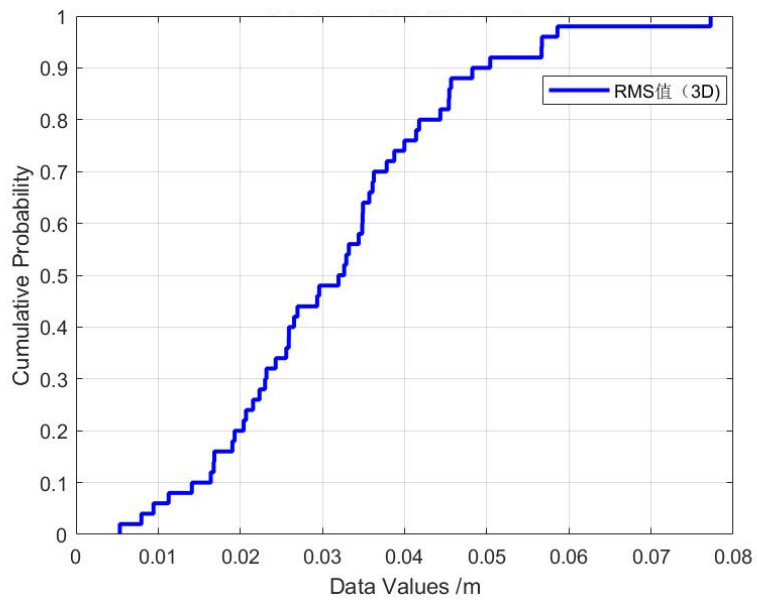
2.2.3 Accuracy and Reliability Statistics

8-Meter Distance

- (1) Cumulative Distribution of 3D Directional Errors:

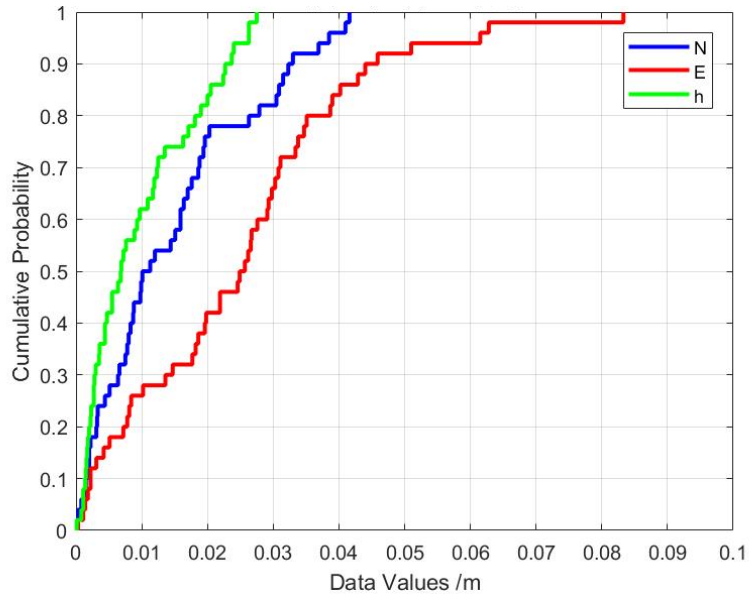


(2) Cumulative Distribution of External Conformity Accuracy(RMS):



10-Meter Distance

(1) Cumulative Distribution of 3D Directional Errors:



(2) Cumulative Distribution of External Conformity Accuracy(RMS):

