

Report for Multi-Station Adjustment

Report date: 2024-11-22

Generated by: KCC

Scope: full report

Host application: RiSCAN PRO 2.19

MSA module: 2.13.2-20231124+90b07cd7

Report module: 1.11.1

Platform: Windows-10-10.0.19045-SP0

Hostname: LAP140676

1 Project Summary

Project name: **2024-09-20 NG FP trees**

Global Coordinate Reference System (GLCS): WGS84 / Geocentric (EPSG::4978)

Report GLCS: WGS84 / UTM zone 47N (EPSG::32647)

Project origin:

Easting [m]: 866608.6077

Northing [m]: 328888.9100

Height [m]: 138.3351

Project Coordinate System (PRCS): levelled Cartesian east, north, up system

GNSS Coordinate Reference Systems:

CRS#1 ... WGS84 / Geographic (EPSG::4979)

Report Coordinate System:

PRCS

number of scan positions: 110

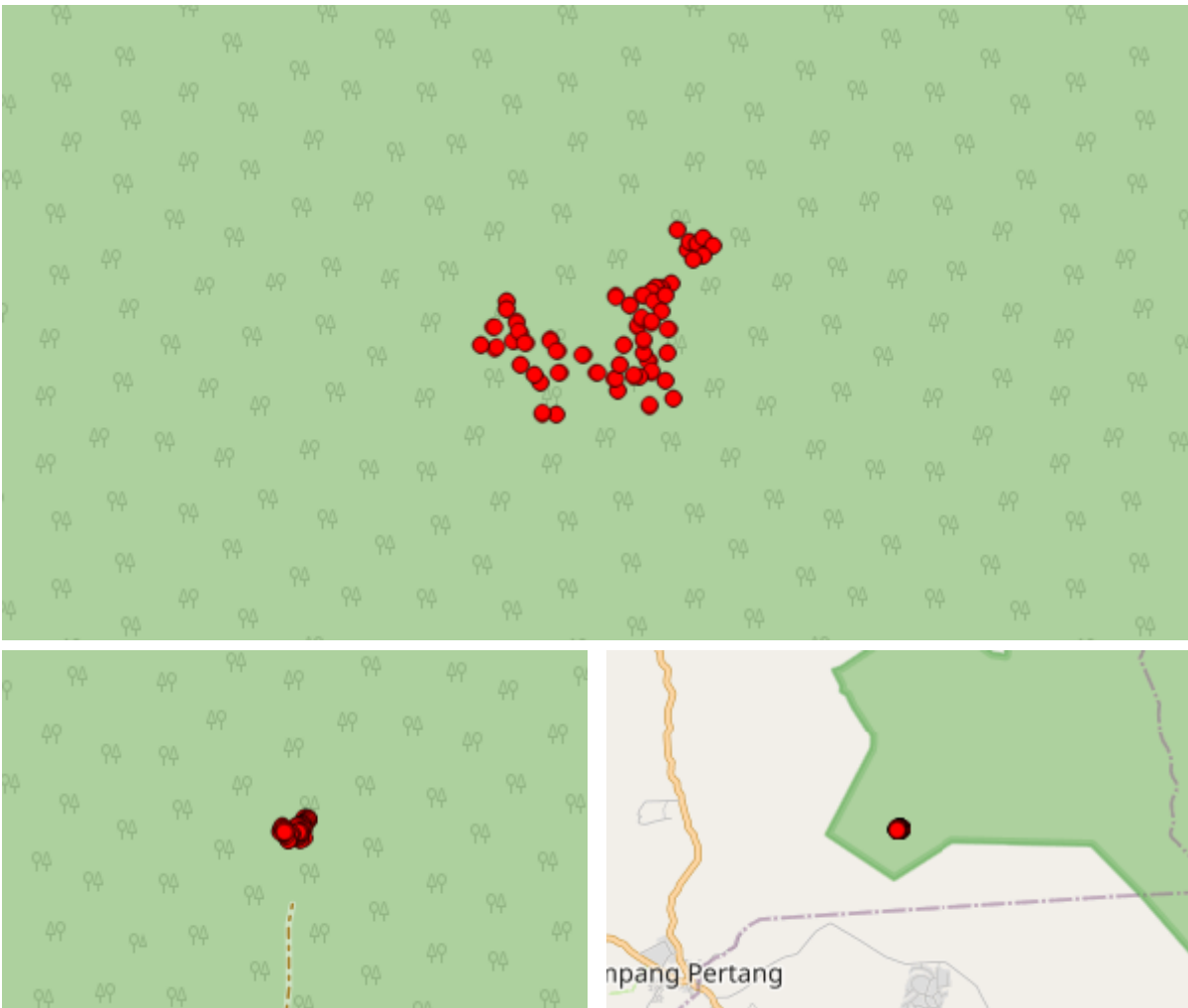
bounding box of scanposition centers: (in PRCS)

direction	from [m]	to [m]	width [m]
east	-59.137	11.013	70.150
north	-49.335	6.195	55.530
height	-2.516	2.148	4.665

instruments used:

instrument type: VZ-400i

serial number: H2227243



Map Data © OpenStreetMap contributors

2 Data available in Project

Control point (CtrlP) – Point of known coordinates and accuracy. Control Points are used in multi-station adjustment / scan data adjustment to register pointclouds to a known control survey.

Check point (ChkP) – Check points are a freely selectable subset of the Control points to verify the success of the adjustment process. Check points are not used for pointcloud registration, but serve as an independent set of control.

2.1 Scandata

Name	Date	Time	Horiz. FoV [deg]	Resolution [mdeg]	Point Count	Image Count	Ref. Scans
ScanPos001	2024-09-20	20:45:52	360.00	30.0	42,684,822	0	0
ScanPos002	2024-09-20	20:47:50	360.00	30.0	40,117,729	0	0
ScanPos003	2024-09-20	20:52:11	359.88	30.0	42,922,967	0	0
ScanPos004	2024-09-20	20:54:03	360.00	30.0	39,373,900	0	0
ScanPos005	2024-09-20	20:58:03	359.99	30.0	44,574,002	0	0

Name	Date	Time	Horiz. FoV [deg]	Resolution [mdeg]	Point Count	Image Count	Refl. Scans
ScanPos006	2024-09-20	20:59:58	360.00	30.0	39,118,926	0	0
ScanPos007	2024-09-20	21:04:00	359.98	30.0	42,831,920	0	0
ScanPos008	2024-09-20	21:05:59	359.97	30.0	40,009,340	0	0
ScanPos009	2024-09-20	21:10:38	359.92	30.0	42,010,968	0	0
ScanPos010	2024-09-20	21:12:27	360.00	30.0	39,173,031	0	0
ScanPos011	2024-09-20	21:15:57	359.99	30.0	42,346,083	0	0
ScanPos012	2024-09-20	21:17:50	360.00	30.0	41,097,436	0	0
ScanPos013	2024-09-20	21:23:31	359.75	30.0	43,074,039	0	0
ScanPos014	2024-09-20	21:25:21	359.89	30.0	39,676,759	0	0
ScanPos015	2024-09-20	21:29:33	359.98	30.0	44,216,967	0	0
ScanPos016	2024-09-20	21:31:23	360.00	30.0	40,581,153	0	0
ScanPos017	2024-09-20	21:36:03	359.86	30.0	44,014,142	0	0
ScanPos018	2024-09-20	21:37:50	360.00	30.0	41,095,401	0	0
ScanPos019	2024-09-20	21:41:03	359.91	30.0	45,646,894	0	0
ScanPos020	2024-09-20	21:42:49	360.00	30.0	42,047,161	0	0
ScanPos021	2024-09-20	21:46:14	359.87	30.0	44,846,070	0	0
ScanPos022	2024-09-20	21:48:00	360.00	30.0	41,557,864	0	0
ScanPos023	2024-09-20	21:50:27	359.74	30.0	44,505,270	0	0
ScanPos024	2024-09-20	21:52:14	359.99	30.0	40,006,745	0	0
ScanPos025	2024-09-20	21:56:03	359.88	30.0	44,808,166	0	0
ScanPos026	2024-09-20	21:57:53	359.94	30.0	41,885,681	0	0
ScanPos027	2024-09-20	22:01:52	359.98	30.0	44,260,358	0	0
ScanPos028	2024-09-20	22:03:40	360.00	30.0	41,660,827	0	0
ScanPos029	2024-09-20	22:08:59	359.82	30.0	45,011,433	0	0
ScanPos030	2024-09-20	22:11:37	359.96	30.0	42,231,507	0	0
ScanPos031	2024-09-20	22:16:38	359.84	30.0	44,576,731	0	0
ScanPos032	2024-09-20	22:18:25	359.98	30.0	42,180,622	0	0
ScanPos033	2024-09-20	22:22:05	359.76	30.0	44,701,721	0	0
ScanPos034	2024-09-20	22:23:57	360.00	30.0	41,488,351	0	0
ScanPos035	2024-09-20	22:26:19	359.90	30.0	44,341,778	0	0
ScanPos036	2024-09-20	22:28:11	360.00	30.0	41,900,425	0	0
ScanPos037	2024-09-20	22:31:46	359.88	30.0	42,590,629	0	0
ScanPos038	2024-09-20	22:33:32	360.00	30.0	39,651,111	0	0
ScanPos039	2024-09-20	22:37:25	359.82	30.0	42,635,294	0	0
ScanPos040	2024-09-20	22:39:13	360.00	30.0	40,261,758	0	0
ScanPos041	2024-09-20	22:42:43	359.79	30.0	42,914,511	0	0
ScanPos042	2024-09-20	22:44:38	359.96	30.0	42,359,393	0	0
ScanPos043	2024-09-20	22:47:08	359.87	30.0	43,844,883	0	0
ScanPos044	2024-09-20	22:48:52	359.91	30.0	40,427,257	0	0
ScanPos045	2024-09-20	22:53:13	359.93	30.0	44,065,427	0	0

Name	Date	Time	Horiz. FoV [deg]	Resolution [mdeg]	Point Count	Image Count	Refl. Scans
ScanPos046	2024-09-20	22:54:59	359.97	30.0	40,809,713	0	0
ScanPos047	2024-09-20	22:58:34	359.93	30.0	44,068,097	0	0
ScanPos048	2024-09-20	23:00:37	360.00	30.0	40,767,077	0	0
ScanPos049	2024-09-20	23:03:44	359.85	30.0	42,630,096	0	0
ScanPos050	2024-09-20	23:05:39	359.93	30.0	40,298,639	0	0
ScanPos051	2024-09-20	23:07:59	359.76	30.0	42,431,593	0	0
ScanPos052	2024-09-20	23:09:45	359.95	30.0	40,471,330	0	0
ScanPos053	2024-09-20	23:13:33	359.80	30.0	40,542,564	0	0
ScanPos054	2024-09-20	23:15:21	359.85	30.0	37,252,803	0	0
ScanPos055	2024-09-20	23:20:26	359.83	30.0	39,404,390	0	0
ScanPos056	2024-09-20	23:22:19	359.91	30.0	37,657,543	0	0
ScanPos057	2024-09-20	23:26:47	359.78	30.0	42,165,621	0	0
ScanPos058	2024-09-20	23:28:47	359.94	30.0	39,656,630	0	0
ScanPos059	2024-09-20	23:31:44	359.97	30.0	42,464,993	0	0
ScanPos060	2024-09-20	23:33:37	360.00	30.0	40,042,534	0	0
ScanPos061	2024-09-20	23:37:47	359.91	30.0	42,012,676	0	0
ScanPos062	2024-09-20	23:39:36	360.00	30.0	36,766,154	0	0
ScanPos063	2024-09-20	23:42:31	359.82	30.0	42,349,149	0	0
ScanPos064	2024-09-20	23:44:24	359.93	30.0	38,641,666	0	0
ScanPos065	2024-09-20	23:48:03	359.84	30.0	41,430,661	0	0
ScanPos066	2024-09-20	23:49:53	359.97	30.0	40,442,570	0	0
ScanPos067	2024-09-20	23:53:50	359.89	30.0	42,398,615	0	0
ScanPos068	2024-09-20	23:55:40	359.99	30.0	39,615,712	0	0
ScanPos069	2024-09-21	00:00:06	359.83	30.0	44,483,081	0	0
ScanPos070	2024-09-21	00:02:03	360.00	30.0	40,774,099	0	0
ScanPos071	2024-09-21	00:05:25	359.86	30.0	44,882,486	0	0
ScanPos072	2024-09-21	00:07:25	359.91	30.0	41,992,354	0	0
ScanPos073	2024-09-21	00:10:18	359.86	30.0	43,435,077	0	0
ScanPos074	2024-09-21	00:12:46	359.96	30.0	40,383,942	0	0
ScanPos075	2024-09-21	00:17:22	359.75	30.0	43,654,156	0	0
ScanPos076	2024-09-21	00:19:18	359.97	30.0	39,591,728	0	0
ScanPos077	2024-09-21	00:24:42	359.73	30.0	45,860,594	0	0
ScanPos078	2024-09-21	00:26:44	359.92	30.0	43,020,610	0	0
ScanPos079	2024-09-21	00:29:05	359.74	30.0	45,630,296	0	0
ScanPos080	2024-09-21	00:30:52	359.90	30.0	42,131,448	0	0
ScanPos081	2024-09-21	00:35:27	359.88	30.0	44,944,671	0	0
ScanPos082	2024-09-21	00:37:23	360.00	30.0	40,508,692	0	0
ScanPos083	2024-09-21	00:41:00	359.87	30.0	44,969,021	0	0
ScanPos084	2024-09-21	00:42:46	359.97	30.0	42,091,456	0	0
ScanPos085	2024-09-21	00:45:25	359.80	30.0	43,982,847	0	0

Name	Date	Time	Horiz. FoV [deg]	Resolution [mdeg]	Point Count	Image Count	Refl. Scans
ScanPos086	2024-09-21	00:47:13	360.00	30.0	40,913,738	0	0
ScanPos087	2024-09-21	00:49:41	359.90	30.0	44,802,063	0	0
ScanPos088	2024-09-21	00:51:32	360.00	30.0	41,602,114	0	0
ScanPos089	2024-09-21	00:55:47	359.78	30.0	44,770,380	0	0
ScanPos090	2024-09-21	00:57:33	359.94	30.0	42,217,154	0	0
ScanPos091	2024-09-21	01:00:24	359.73	30.0	44,839,991	0	0
ScanPos092	2024-09-21	01:02:14	359.77	30.0	41,309,588	0	0
ScanPos093	2024-09-21	01:05:41	359.86	30.0	44,481,923	0	0
ScanPos094	2024-09-21	01:09:20	360.00	30.0	39,366,563	0	0
ScanPos095	2024-09-21	01:12:45	359.58	30.0	43,528,842	0	0
ScanPos096	2024-09-21	01:14:52	359.83	30.0	40,686,057	0	0
ScanPos097	2024-09-21	01:18:18	359.82	30.0	43,366,443	0	0
ScanPos098	2024-09-21	01:20:11	359.86	30.0	40,075,471	0	0
ScanPos099	2024-09-21	01:24:44	359.83	30.0	42,699,463	0	0
ScanPos100	2024-09-21	01:26:34	360.00	30.0	40,016,689	0	0
ScanPos101	2024-09-21	01:33:01	359.83	30.0	43,356,317	0	0
ScanPos102	2024-09-21	01:34:47	359.95	30.0	39,510,552	0	0
ScanPos103	2024-09-21	01:38:00	359.89	30.0	43,164,526	0	0
ScanPos104	2024-09-21	01:40:24	359.97	30.0	38,972,347	0	0
ScanPos105	2024-09-21	01:44:23	359.85	30.0	44,163,694	0	0
ScanPos106	2024-09-21	01:46:21	359.95	30.0	40,456,873	0	0
ScanPos107	2024-09-21	01:49:45	359.94	30.0	44,308,002	0	0
ScanPos108	2024-09-21	01:51:29	359.95	30.0	40,211,933	0	0
ScanPos109	2024-09-21	01:54:58	359.87	30.0	45,267,673	0	0
ScanPos110	2024-09-21	01:56:51	359.95	30.0	41,097,769	0	0
Total					4,627,171,001		

2.2 GNSS Measurements

The VZ-400i acquired no GNSS measurements.

2.3 Orientation Measurements

The VZ-400i acquired the following measurements for roll, pitch and yaw angles (all values in deg).

Name	Roll	Pitch	Yaw	Acc. Roll	Acc. Pitch	Acc. Yaw	PoseEstimation Type
ScanPos001	3.356	0.079	-22.498	0.012	0.012	1.000	dynamic
ScanPos002	-97.671	54.697	-91.406	0.143	0.143	1.000	dynamic
ScanPos003	-2.166	-0.005	136.202	0.010	0.010	1.000	dynamic
ScanPos004	130.120	-81.795	10.245	0.142	0.142	1.000	dynamic
ScanPos005	3.667	1.626	-90.986	0.013	0.013	1.000	dynamic
ScanPos006	-96.605	44.783	-142.556	0.143	0.143	1.000	dynamic

Name	Roll	Pitch	Yaw	Acc. Roll	Acc. Pitch	Acc. Yaw	PoseEstimation Type
ScanPos007	0.659	3.726	-158.766	0.013	0.013	1.000	dynamic
ScanPos008	106.704	-74.708	98.534	0.143	0.143	1.000	dynamic
ScanPos009	-0.030	0.558	60.166	0.008	0.008	1.000	dynamic
ScanPos010	99.769	-57.010	-6.792	0.142	0.142	1.000	dynamic
ScanPos011	1.598	-2.247	5.376	0.011	0.011	1.000	dynamic
ScanPos012	-130.337	-79.246	130.946	0.139	0.139	1.000	dynamic
ScanPos013	-1.688	-6.587	8.355	0.018	0.018	1.000	dynamic
ScanPos014	-96.688	-5.594	6.334	0.139	0.139	1.000	dynamic
ScanPos015	-0.218	3.415	-129.431	0.012	0.012	1.000	dynamic
ScanPos016	-155.449	-85.291	15.097	0.143	0.143	1.000	dynamic
ScanPos017	-0.495	-4.392	141.289	0.014	0.014	1.000	dynamic
ScanPos018	-95.549	1.717	138.031	0.141	0.141	1.000	dynamic
ScanPos019	-2.787	3.919	151.503	0.015	0.015	1.000	dynamic
ScanPos020	-97.511	2.444	153.681	0.138	0.138	1.000	dynamic
ScanPos021	-0.230	-1.950	95.113	0.010	0.010	1.000	dynamic
ScanPos022	152.377	-82.161	-53.774	0.139	0.139	1.000	dynamic
ScanPos023	0.559	-0.325	106.391	0.008	0.008	1.000	dynamic
ScanPos024	142.975	-82.670	-34.369	0.141	0.141	1.000	dynamic
ScanPos025	-2.272	2.591	116.406	0.012	0.012	1.000	dynamic
ScanPos026	84.283	-40.526	70.405	0.143	0.143	1.000	dynamic
ScanPos027	-1.803	1.125	126.490	0.010	0.010	1.000	dynamic
ScanPos028	-96.716	-2.105	132.456	0.139	0.139	1.000	dynamic
ScanPos029	-1.875	0.892	26.432	0.010	0.010	1.000	dynamic
ScanPos030	-95.760	-2.275	35.832	0.141	0.141	1.000	dynamic
ScanPos031	0.201	-1.021	27.880	0.009	0.009	1.000	dynamic
ScanPos032	-100.996	-55.976	99.040	0.140	0.140	1.000	dynamic
ScanPos033	-0.417	-2.807	94.268	0.012	0.012	1.000	dynamic
ScanPos034	105.038	72.721	177.440	0.143	0.143	1.000	dynamic
ScanPos035	-0.814	-4.864	98.652	0.015	0.015	1.000	dynamic
ScanPos036	74.542	72.427	153.840	0.143	0.143	1.000	dynamic
ScanPos037	2.019	-6.179	-19.884	0.017	0.017	1.000	dynamic
ScanPos038	71.886	74.284	33.831	0.142	0.142	1.000	dynamic
ScanPos039	-3.937	3.236	162.123	0.015	0.015	1.000	dynamic
ScanPos040	-128.023	-82.886	-76.564	0.143	0.143	1.000	dynamic
ScanPos041	-3.423	-2.459	117.848	0.014	0.014	1.000	dynamic
ScanPos042	128.312	82.905	-118.417	0.143	0.143	1.000	dynamic
ScanPos043	2.191	3.085	-136.359	0.013	0.013	1.000	dynamic
ScanPos044	124.836	77.533	-16.738	0.139	0.139	1.000	dynamic
ScanPos045	-0.456	3.731	-162.031	0.013	0.013	1.000	dynamic
ScanPos046	143.538	79.498	-19.932	0.137	0.137	1.000	dynamic
ScanPos047	1.669	2.738	14.049	0.012	0.012	1.000	dynamic

Name	Roll	Pitch	Yaw	Acc. Roll	Acc. Pitch	Acc. Yaw	PoseEstimation Type
ScanPos048	101.349	-66.726	-63.341	0.143	0.143	1.000	dynamic
ScanPos049	3.732	6.920	-48.546	0.019	0.019	1.000	dynamic
ScanPos050	79.512	-63.640	-100.680	0.143	0.143	1.000	dynamic
ScanPos051	1.614	2.445	-74.412	0.012	0.012	1.000	dynamic
ScanPos052	101.605	-67.070	-149.440	0.143	0.143	1.000	dynamic
ScanPos053	1.547	-1.253	-12.607	0.010	0.010	1.000	dynamic
ScanPos054	-102.213	-60.916	63.806	0.141	0.141	1.000	dynamic
ScanPos055	2.843	7.110	-54.722	0.019	0.019	1.000	dynamic
ScanPos056	-72.089	-70.176	2.626	0.140	0.140	1.000	dynamic
ScanPos057	-1.955	-0.960	78.372	0.010	0.010	1.000	dynamic
ScanPos058	-123.482	80.519	-42.646	0.142	0.142	1.000	dynamic
ScanPos059	7.317	-0.072	14.179	0.019	0.019	1.000	dynamic
ScanPos060	-83.715	33.150	-17.874	0.142	0.142	1.000	dynamic
ScanPos061	-1.423	3.474	-91.826	0.013	0.013	1.000	dynamic
ScanPos062	-101.536	-67.158	-16.370	0.143	0.143	1.000	dynamic
ScanPos063	4.835	8.357	-75.053	0.022	0.022	1.000	dynamic
ScanPos064	-67.809	-70.330	-29.841	0.138	0.138	1.000	dynamic
ScanPos065	0.285	-4.613	22.427	0.014	0.014	1.000	dynamic
ScanPos066	7.179	85.392	17.880	0.143	0.143	1.000	dynamic
ScanPos067	1.194	-0.773	-177.711	0.009	0.009	1.000	dynamic
ScanPos068	144.380	-82.334	35.679	0.140	0.140	1.000	dynamic
ScanPos069	1.929	-2.915	-95.508	0.013	0.013	1.000	dynamic
ScanPos070	97.983	51.611	-31.360	0.142	0.142	1.000	dynamic
ScanPos071	-4.091	-2.852	81.778	0.015	0.015	1.000	dynamic
ScanPos072	81.223	56.476	118.355	0.142	0.142	1.000	dynamic
ScanPos073	0.721	4.750	-53.840	0.015	0.015	1.000	dynamic
ScanPos074	103.768	56.432	12.043	0.138	0.138	1.000	dynamic
ScanPos075	-0.346	0.594	-165.996	0.008	0.008	1.000	dynamic
ScanPos076	125.539	80.385	-42.973	0.141	0.141	1.000	dynamic
ScanPos077	0.238	-1.913	69.737	0.010	0.010	1.000	dynamic
ScanPos078	-172.696	-82.993	-119.504	0.139	0.139	1.000	dynamic
ScanPos079	3.574	1.636	32.166	0.013	0.013	1.000	dynamic
ScanPos080	156.490	-84.751	-124.056	0.142	0.142	1.000	dynamic
ScanPos081	0.189	-7.113	114.555	0.018	0.018	1.000	dynamic
ScanPos082	-85.288	21.122	97.227	0.143	0.143	1.000	dynamic
ScanPos083	1.370	4.819	-126.590	0.015	0.015	1.000	dynamic
ScanPos084	68.694	-76.266	166.589	0.142	0.142	1.000	dynamic
ScanPos085	-2.162	2.937	-67.122	0.013	0.013	1.000	dynamic
ScanPos086	62.533	-80.022	-112.990	0.143	0.143	1.000	dynamic
ScanPos087	1.223	6.099	-134.768	0.017	0.017	1.000	dynamic
ScanPos088	66.888	-76.154	159.061	0.141	0.141	1.000	dynamic

Name	Roll	Pitch	Yaw	Acc. Roll	Acc. Pitch	Acc. Yaw	PoseEstimation Type
ScanPos089	-5.007	-0.151	135.979	0.015	0.015	1.000	dynamic
ScanPos090	83.502	-47.344	88.544	0.143	0.143	1.000	dynamic
ScanPos091	3.995	-3.392	48.751	0.015	0.015	1.000	dynamic
ScanPos092	101.591	-42.585	-3.693	0.136	0.136	1.000	dynamic
ScanPos093	2.960	1.642	20.432	0.012	0.012	1.000	dynamic
ScanPos094	-171.146	-85.318	-169.570	0.143	0.143	1.000	dynamic
ScanPos095	2.587	-4.303	42.049	0.015	0.015	1.000	dynamic
ScanPos096	72.698	74.909	91.521	0.143	0.143	1.000	dynamic
ScanPos097	-0.961	5.325	-148.924	0.016	0.016	1.000	dynamic
ScanPos098	-69.927	-76.303	-99.418	0.143	0.143	1.000	dynamic
ScanPos099	-1.991	-1.283	161.384	0.011	0.011	1.000	dynamic
ScanPos100	-122.972	-77.415	-88.976	0.139	0.139	1.000	dynamic
ScanPos101	-1.660	1.725	137.867	0.011	0.011	1.000	dynamic
ScanPos102	-96.822	-27.513	170.490	0.140	0.140	1.000	dynamic
ScanPos103	0.089	2.278	92.905	0.011	0.011	1.000	dynamic
ScanPos104	130.916	-82.915	-33.642	0.143	0.143	1.000	dynamic
ScanPos105	1.600	3.521	66.957	0.013	0.013	1.000	dynamic
ScanPos106	-81.047	-60.116	123.575	0.143	0.143	1.000	dynamic
ScanPos107	-6.596	2.206	-179.325	0.018	0.018	1.000	dynamic
ScanPos108	106.984	72.274	-86.737	0.142	0.142	1.000	dynamic
ScanPos109	2.858	2.887	-19.886	0.013	0.013	1.000	dynamic
ScanPos110	-75.939	-72.860	46.254	0.143	0.143	1.000	dynamic

2.4 Control Points defined in a coordinate reference system

No Control Points in a coordinate reference system used.

2.5 Check Points defined in a coordinate reference system

No Check Points in a coordinate reference system used.

2.6 Control Points defined in a locally levelled coordinate system

No Control Points in a locally leveled coordinate system used.

2.7 Check Points defined in a locally levelled coordinate system

No Check Points in a locally leveled coordinate system defined.

3 Data used for Multi-station-Adjustment

3.1 Data per Scan Position

Name	Number of Plane Patches			Plane Patches of Phase 3		
	Phase 1	Phase 2	Phase 3	NS	WE	Horiz.
ScanPos001	14,848	3,798	4,048	565	595	864
ScanPos002	12,284	3,054	3,204	426	471	705
ScanPos003	16,884	4,046	4,286	597	568	978
ScanPos004	12,048	2,992	3,122	436	410	715
ScanPos005	11,992	2,730	2,834	363	391	663
ScanPos006	8,144	1,746	1,828	230	236	448
ScanPos007	17,232	3,970	4,190	415	441	1,239
ScanPos008	10,662	2,840	2,952	359	325	792
ScanPos009	13,806	3,324	3,424	429	326	957
ScanPos010	11,384	2,848	2,924	396	277	789
ScanPos011	12,730	3,184	3,322	425	313	923
ScanPos012	9,426	2,118	2,194	286	198	613
ScanPos013	14,122	3,200	3,342	444	388	839
ScanPos014	11,918	2,748	2,876	415	312	711
ScanPos015	14,182	3,460	3,584	409	461	922
ScanPos016	10,880	2,496	2,592	346	327	623
ScanPos017	20,682	5,094	5,382	664	752	1,275
ScanPos018	13,156	3,042	3,218	299	440	870
ScanPos019	26,104	6,774	7,134	922	1,043	1,602
ScanPos020	19,470	4,374	4,694	455	741	1,151
ScanPos021	27,596	7,298	7,708	859	1,143	1,852
ScanPos022	21,632	5,316	5,632	566	862	1,388
ScanPos023	27,608	7,418	7,896	1,000	1,219	1,729
ScanPos024	23,162	6,064	6,380	766	1,038	1,386
ScanPos025	24,736	6,882	7,256	972	1,177	1,479
ScanPos026	17,822	4,862	5,074	700	770	1,067
ScanPos027	29,364	7,924	8,448	1,099	1,411	1,714
ScanPos028	22,764	6,118	6,524	861	1,136	1,265
ScanPos029	25,026	6,944	7,340	931	1,273	1,466
ScanPos030	19,696	5,344	5,596	712	979	1,107
ScanPos031	33,556	9,542	10,162	1,386	1,705	1,990
ScanPos032	27,812	7,668	8,058	1,101	1,314	1,614
ScanPos033	30,812	8,288	8,886	1,433	1,539	1,471
ScanPos034	20,738	5,484	5,778	844	977	1,068
ScanPos035	37,114	10,594	11,218	1,780	1,884	1,945
ScanPos036	28,364	8,332	8,744	1,315	1,483	1,574
ScanPos037	15,264	3,864	4,026	638	718	657

Name	Number of Plane Patches			Plane Patches of Phase 3		
	Phase 1	Phase 2	Phase 3	NS	WE	Horiz.
ScanPos038	11,056	2,520	2,610	429	438	438
ScanPos039	22,276	6,242	6,552	973	1,143	1,160
ScanPos040	14,986	4,000	4,186	628	722	743
ScanPos041	38,808	11,198	11,774	1,813	1,937	2,137
ScanPos042	32,038	9,302	9,688	1,492	1,639	1,713
ScanPos043	28,948	7,474	7,858	1,074	1,317	1,538
ScanPos044	25,182	6,638	6,870	988	1,215	1,232
ScanPos045	22,438	5,938	6,304	1,058	1,095	999
ScanPos046	17,984	4,266	4,488	713	712	819
ScanPos047	35,930	9,568	10,282	1,687	1,905	1,549
ScanPos048	29,170	7,934	8,546	1,391	1,575	1,307
ScanPos049	39,022	10,928	11,570	1,763	2,259	1,763
ScanPos050	29,746	7,888	8,338	1,359	1,448	1,362
ScanPos051	33,936	9,070	9,620	1,703	1,818	1,289
ScanPos052	25,150	6,516	6,856	1,076	1,336	1,016
ScanPos053	20,440	5,632	5,896	1,062	1,150	736
ScanPos054	16,636	3,866	4,038	652	712	655
ScanPos055	22,954	6,092	6,408	1,181	1,295	728
ScanPos056	15,978	3,984	4,170	529	950	606
ScanPos057	36,336	9,802	10,424	1,787	1,907	1,518
ScanPos058	31,294	8,144	8,614	1,474	1,655	1,178
ScanPos059	33,622	8,776	9,296	1,523	1,777	1,348
ScanPos060	26,252	6,896	7,232	1,166	1,304	1,146
ScanPos061	25,690	7,024	7,350	1,325	1,432	918
ScanPos062	21,002	5,322	5,628	832	1,097	885
ScanPos063	32,164	8,760	9,252	1,721	1,732	1,173
ScanPos064	23,976	5,930	6,258	1,092	1,211	826
ScanPos065	34,276	8,834	9,394	1,747	1,767	1,183
ScanPos066	26,958	6,840	7,258	1,393	1,224	1,012
ScanPos067	33,690	9,182	9,704	1,854	1,810	1,188
ScanPos068	26,278	6,978	7,326	1,357	1,318	988
ScanPos069	39,756	11,384	11,872	2,024	2,122	1,790
ScanPos070	32,728	9,310	9,704	1,665	1,881	1,306
ScanPos071	37,034	10,848	11,240	1,854	2,025	1,741
ScanPos072	20,400	4,910	5,064	744	970	818
ScanPos073	31,190	8,304	8,726	1,469	1,721	1,173
ScanPos074	24,716	6,618	6,884	1,278	1,344	820
ScanPos075	24,864	5,928	6,354	1,423	1,127	627
ScanPos076	19,540	4,636	4,906	1,063	877	513
ScanPos077	31,020	7,962	8,474	1,550	1,764	923

Name	Number of Plane Patches			Plane Patches of Phase 3		
	Phase 1	Phase 2	Phase 3	NS	WE	Horiz.
ScanPos078	20,758	4,990	5,270	920	1,070	645
ScanPos079	31,812	7,964	8,474	1,543	1,683	1,011
ScanPos080	22,400	5,416	5,746	1,049	1,108	716
ScanPos081	30,128	7,654	8,040	1,476	1,625	919
ScanPos082	20,716	5,144	5,408	973	1,057	674
ScanPos083	30,094	7,482	7,934	1,516	1,442	1,009
ScanPos084	22,878	5,562	5,846	985	1,094	844
ScanPos085	25,430	5,986	6,350	1,208	1,334	633
ScanPos086	21,940	4,906	5,180	943	1,092	555
ScanPos087	29,018	6,658	6,928	1,263	1,504	697
ScanPos088	22,438	5,040	5,296	928	1,184	536
ScanPos089	35,450	9,078	9,530	1,650	1,914	1,201
ScanPos090	28,532	7,382	7,668	1,446	1,461	927
ScanPos091	29,678	7,716	8,010	1,283	1,567	1,155
ScanPos092	22,128	5,454	5,662	922	1,203	706
ScanPos093	27,366	6,958	7,224	1,137	1,375	1,100
ScanPos094	18,828	4,752	4,934	806	873	788
ScanPos095	17,610	4,192	4,366	738	708	737
ScanPos096	12,770	3,042	3,126	466	481	616
ScanPos097	15,728	3,584	3,758	646	612	621
ScanPos098	12,842	2,764	2,850	500	449	476
ScanPos099	16,678	3,860	3,986	589	685	719
ScanPos100	12,694	2,832	2,918	401	465	593
ScanPos101	13,042	2,956	3,050	401	598	526
ScanPos102	9,628	2,134	2,216	255	393	460
ScanPos103	15,728	3,480	3,582	510	633	648
ScanPos104	11,016	2,396	2,466	274	430	529
ScanPos105	19,158	4,466	4,620	626	924	760
ScanPos106	14,540	3,476	3,596	469	616	713
ScanPos107	25,164	6,246	6,390	980	1,227	988
ScanPos108	18,592	4,338	4,414	639	766	802
ScanPos109	30,898	8,114	8,364	1,371	1,630	1,181
ScanPos110	15,582	3,202	3,362	527	594	560

NS ... North-South, WE ... West-East, Horiz. ... Horizontal

3.2 Control Points used for Multi-Station Adjustment

No Control Points used.

3.3 Tie Points used for Multi-Station Adjustment

No Tie Points used.

4 Results of MSA

4.1 General Information

User Settings:

use CRS control points: False
use SOCS tie points: False
use LLCS control points: False
GNSS measurement usage: no
gap closure distance: 0.250 m
adjustment effort: extreme
adjustment matches: planes to planes
reporting level: full
initialize optimization with measurements: False
maximum target range: 0.000 m

Observations Used:

project plane patches: 143,796
scan position plane patches: 339,727
GNSS measurements: 0
orientation measurements: 110
control points in CRS: 0
control points in LLCS: 0
tie points in PRCS: 0
LLCS: 0
project northing from: GNSS

Adjustment Info:

start time: 2024-11-22T11:38:24
run time: 00:36:17
parameters estimated: 432,046

4.2 Final Poses of Scan Positions

The following positions and orientations have been estimated for the scan positions:

In the PRCS coordinate system:

Name	X [m]	Y [m]	Z [m]	Acc. X [m]	Acc. Y [m]	Acc. Z [m]
ScanPos001	2.832	0.195	1.936	0.000	0.000	0.000
ScanPos002	3.111	0.273	1.650	0.000	0.000	0.000
ScanPos003	3.641	2.525	1.776	0.000	0.000	0.000
ScanPos004	3.875	2.368	1.482	0.000	0.000	0.000
ScanPos005	-0.136	6.195	1.878	0.000	0.000	0.000
ScanPos006	0.086	6.011	1.590	0.000	0.000	0.000

Name	X [m]	Y [m]	Z [m]	Acc. X [m]	Acc. Y [m]	Acc. Z [m]
ScanPos007	6.072	1.628	1.905	0.000	0.000	0.000
ScanPos008	6.320	1.792	1.626	0.000	0.000	0.000
ScanPos009	7.778	3.895	1.866	0.000	0.000	0.000
ScanPos010	7.778	3.613	1.571	0.000	0.000	0.000
ScanPos011	11.013	0.996	1.977	0.000	0.000	0.000
ScanPos012	10.747	1.041	1.672	0.000	0.000	0.000
ScanPos013	7.635	-1.794	2.148	0.000	0.000	0.000
ScanPos014	7.648	-1.520	1.848	0.000	0.000	0.000
ScanPos015	4.739	-3.156	1.895	0.000	0.000	0.000
ScanPos016	4.932	-2.931	1.615	0.000	0.000	0.000
ScanPos017	-1.546	-10.013	1.698	0.000	0.000	0.000
ScanPos018	-1.756	-10.196	1.403	0.000	0.000	0.000
ScanPos019	-4.574	-11.475	1.360	0.000	0.000	0.000
ScanPos020	-4.679	-11.722	1.052	0.000	0.000	0.000
ScanPos021	-6.453	-11.087	1.242	0.000	0.000	0.000
ScanPos022	-6.414	-11.351	0.937	0.000	0.000	0.000
ScanPos023	-7.791	-12.402	1.076	0.000	0.000	0.000
ScanPos024	-7.702	-12.664	0.779	0.000	0.000	0.000
ScanPos025	-10.453	-13.762	1.015	0.000	0.000	0.000
ScanPos026	-10.170	-13.846	0.735	0.000	0.000	0.000
ScanPos027	-6.646	-15.438	0.901	0.000	0.000	0.000
ScanPos028	-6.852	-15.610	0.598	0.000	0.000	0.000
ScanPos029	-3.296	-13.863	1.190	0.000	0.000	0.000
ScanPos030	-3.425	-13.625	0.892	0.000	0.000	0.000
ScanPos031	-4.525	-18.068	0.834	0.000	0.000	0.000
ScanPos032	-4.797	-18.021	0.534	0.000	0.000	0.000
ScanPos033	-12.121	-22.924	0.435	0.000	0.000	0.000
ScanPos034	-12.055	-22.639	0.152	0.000	0.000	0.000
ScanPos035	-10.513	-20.413	0.603	0.000	0.000	0.000
ScanPos036	-10.469	-20.114	0.332	0.000	0.000	0.000
ScanPos037	-18.483	-13.826	0.825	0.000	0.000	0.000
ScanPos038	-18.220	-13.986	0.559	0.000	0.000	0.000
ScanPos039	-14.469	-16.743	0.668	0.000	0.000	0.000
ScanPos040	-14.185	-16.824	0.388	0.000	0.000	0.000
ScanPos041	-7.628	-21.632	0.603	0.000	0.000	0.000
ScanPos042	-7.709	-21.349	0.321	0.000	0.000	0.000
ScanPos043	-2.483	-23.686	0.727	0.000	0.000	0.000
ScanPos044	-2.691	-23.845	0.423	0.000	0.000	0.000
ScanPos045	-2.919	-30.691	0.328	0.000	0.000	0.000
ScanPos046	-3.175	-30.736	0.014	0.000	0.000	0.000
ScanPos047	-8.364	-33.178	-0.207	0.000	0.000	0.000

Name	X [m]	Y [m]	Z [m]	Acc. X [m]	Acc. Y [m]	Acc. Z [m]
ScanPos048	-8.614	-33.322	-0.488	0.000	0.000	0.000
ScanPos049	-7.445	-36.400	-0.549	0.000	0.000	0.000
ScanPos050	-7.695	-36.224	-0.818	0.000	0.000	0.000
ScanPos051	-3.621	-39.149	-0.542	0.000	0.000	0.000
ScanPos052	-3.776	-38.907	-0.824	0.000	0.000	0.000
ScanPos053	-1.138	-44.670	-0.796	0.000	0.000	0.000
ScanPos054	-1.326	-44.466	-1.095	0.000	0.000	0.000
ScanPos055	-7.989	-46.464	-1.219	0.000	0.000	0.000
ScanPos056	-8.069	-46.158	-1.475	0.000	0.000	0.000
ScanPos057	-11.118	-37.914	-0.687	0.000	0.000	0.000
ScanPos058	-11.070	-37.636	-0.981	0.000	0.000	0.000
ScanPos059	-13.289	-37.695	-0.718	0.000	0.000	0.000
ScanPos060	-13.212	-37.395	-0.979	0.000	0.000	0.000
ScanPos061	-18.020	-42.284	-1.102	0.000	0.000	0.000
ScanPos062	-17.923	-42.008	-1.384	0.000	0.000	0.000
ScanPos063	-18.730	-38.684	-0.873	0.000	0.000	0.000
ScanPos064	-18.686	-38.363	-1.120	0.000	0.000	0.000
ScanPos065	-24.345	-36.562	-0.998	0.000	0.000	0.000
ScanPos066	-24.061	-36.461	-1.271	0.000	0.000	0.000
ScanPos067	-17.490	-34.045	-0.532	0.000	0.000	0.000
ScanPos068	-17.217	-34.020	-0.833	0.000	0.000	0.000
ScanPos069	-10.001	-30.529	0.022	0.000	0.000	0.000
ScanPos070	-10.174	-30.756	-0.268	0.000	0.000	0.000
ScanPos071	-10.315	-27.096	0.451	0.000	0.000	0.000
ScanPos072	-10.094	-26.891	0.183	0.000	0.000	0.000
ScanPos073	-16.204	-28.207	-0.049	0.000	0.000	0.000
ScanPos074	-16.210	-28.463	-0.357	0.000	0.000	0.000
ScanPos075	-27.976	-31.357	-0.683	0.000	0.000	0.000
ScanPos076	-28.252	-31.384	-0.978	0.000	0.000	0.000
ScanPos077	-38.098	-26.657	-0.487	0.000	0.000	0.000
ScanPos078	-38.207	-26.903	-0.791	0.000	0.000	0.000
ScanPos079	-35.956	-30.075	-0.577	0.000	0.000	0.000
ScanPos080	-36.217	-30.193	-0.865	0.000	0.000	0.000
ScanPos081	-35.357	-36.604	-1.225	0.000	0.000	0.000
ScanPos082	-35.652	-36.561	-1.501	0.000	0.000	0.000
ScanPos083	-41.070	-39.830	-1.566	0.000	0.000	0.000
ScanPos084	-40.929	-39.564	-1.832	0.000	0.000	0.000
ScanPos085	-36.105	-49.335	-1.969	0.000	0.000	0.000
ScanPos086	-36.269	-49.090	-2.243	0.000	0.000	0.000
ScanPos087	-40.701	-48.917	-2.254	0.000	0.000	0.000
ScanPos088	-40.522	-48.668	-2.516	0.000	0.000	0.000

Name	X [m]	Y [m]	Z [m]	Acc. X [m]	Acc. Y [m]	Acc. Z [m]
ScanPos089	-43.004	-37.438	-1.398	0.000	0.000	0.000
ScanPos090	-42.709	-37.408	-1.677	0.000	0.000	0.000
ScanPos091	-47.219	-34.273	-1.453	0.000	0.000	0.000
ScanPos092	-47.208	-34.524	-1.767	0.000	0.000	0.000
ScanPos093	-48.828	-27.432	-0.637	0.000	0.000	0.000
ScanPos094	-49.112	-27.485	-0.923	0.000	0.000	0.000
ScanPos095	-54.587	-29.376	-0.698	0.000	0.000	0.000
ScanPos096	-54.333	-29.220	-0.972	0.000	0.000	0.000
ScanPos097	-59.137	-28.395	-0.767	0.000	0.000	0.000
ScanPos098	-58.856	-28.281	-1.039	0.000	0.000	0.000
ScanPos099	-55.269	-22.775	-0.094	0.000	0.000	0.000
ScanPos100	-55.022	-22.887	-0.397	0.000	0.000	0.000
ScanPos101	-51.044	-15.098	0.673	0.000	0.000	0.000
ScanPos102	-51.090	-15.370	0.374	0.000	0.000	0.000
ScanPos103	-51.162	-17.637	0.536	0.000	0.000	0.000
ScanPos104	-51.126	-17.925	0.252	0.000	0.000	0.000
ScanPos105	-47.935	-21.485	0.223	0.000	0.000	0.000
ScanPos106	-48.174	-21.663	-0.055	0.000	0.000	0.000
ScanPos107	-47.134	-24.566	-0.270	0.000	0.000	0.000
ScanPos108	-47.383	-24.429	-0.560	0.000	0.000	0.000
ScanPos109	-45.395	-27.770	-0.734	0.000	0.000	0.000
ScanPos110	-45.611	-27.567	-1.010	0.000	0.000	0.000

Name	Roll [deg]	Pitch [deg]	Yaw [deg]	Acc. Roll [deg]	Acc. Pitch [deg]	Acc. Yaw [deg]
ScanPos001	3.354	0.082	-24.206	0.010	0.010	0.001
ScanPos002	-92.606	54.893	-78.791	0.010	0.010	0.002
ScanPos003	-2.174	-0.005	135.563	0.010	0.010	0.001
ScanPos004	116.081	-82.978	28.155	0.013	0.010	0.008
ScanPos005	3.667	1.625	-91.824	0.010	0.010	0.001
ScanPos006	-92.852	44.917	-135.143	0.010	0.010	0.001
ScanPos007	0.662	3.730	-158.556	0.010	0.010	0.001
ScanPos008	89.912	-75.309	124.789	0.011	0.010	0.004
ScanPos009	-0.027	0.565	58.332	0.010	0.010	0.001
ScanPos010	95.760	-57.235	-4.571	0.010	0.010	0.002
ScanPos011	1.601	-2.249	3.152	0.010	0.010	0.001
ScanPos012	-123.592	-80.161	115.826	0.011	0.010	0.006
ScanPos013	-1.701	-6.600	5.188	0.010	0.010	0.001
ScanPos014	-95.089	-5.625	4.260	0.010	0.010	0.001
ScanPos015	-0.224	3.421	-129.185	0.010	0.010	0.001
ScanPos016	-97.251	-88.038	-33.494	0.029	0.010	0.027
ScanPos017	-0.498	-4.405	141.596	0.010	0.010	0.000
ScanPos018	-93.530	1.707	135.310	0.010	0.010	0.001

Name	Roll [deg]	Pitch [deg]	Yaw [deg]	Acc. Roll [deg]	Acc. Pitch [deg]	Acc. Yaw [deg]
ScanPos019	-2.797	3.931	150.679	0.010	0.010	0.000
ScanPos020	-96.169	2.437	152.458	0.010	0.010	0.001
ScanPos021	-0.236	-1.954	93.981	0.010	0.010	0.000
ScanPos022	145.786	-83.485	-47.633	0.011	0.010	0.005
ScanPos023	0.562	-0.327	105.609	0.010	0.010	0.000
ScanPos024	130.929	-84.113	-21.414	0.012	0.010	0.006
ScanPos025	-2.279	2.604	115.052	0.010	0.010	0.000
ScanPos026	90.055	-40.648	73.803	0.010	0.010	0.001
ScanPos027	-1.808	1.129	125.269	0.010	0.010	0.000
ScanPos028	-95.156	-2.122	129.041	0.010	0.010	0.001
ScanPos029	-1.892	0.903	24.413	0.010	0.010	0.000
ScanPos030	-93.817	-2.295	28.021	0.010	0.010	0.000
ScanPos031	0.198	-1.023	25.497	0.010	0.010	0.000
ScanPos032	-97.739	-56.243	87.491	0.010	0.010	0.001
ScanPos033	-0.431	-2.813	92.826	0.010	0.010	0.000
ScanPos034	92.885	73.275	169.425	0.010	0.010	0.002
ScanPos035	-0.814	-4.875	97.324	0.010	0.010	0.000
ScanPos036	84.957	72.972	166.307	0.010	0.010	0.002
ScanPos037	2.015	-6.195	-22.642	0.010	0.010	0.001
ScanPos038	82.053	74.912	48.117	0.011	0.010	0.004
ScanPos039	-3.949	3.237	161.845	0.010	0.010	0.000
ScanPos040	-94.578	-84.387	-105.106	0.013	0.010	0.008
ScanPos041	-3.436	-2.469	117.438	0.010	0.010	0.000
ScanPos042	97.364	84.383	-153.768	0.011	0.010	0.006
ScanPos043	2.197	3.087	-136.198	0.010	0.010	0.000
ScanPos044	118.591	78.340	-26.486	0.010	0.010	0.003
ScanPos045	-0.462	3.743	-161.819	0.010	0.010	0.000
ScanPos046	139.123	80.465	-30.300	0.011	0.010	0.004
ScanPos047	1.671	2.744	12.246	0.010	0.010	0.000
ScanPos048	91.580	-67.113	-59.016	0.010	0.010	0.001
ScanPos049	3.737	6.936	-49.648	0.010	0.010	0.000
ScanPos050	86.519	-63.967	-116.546	0.010	0.010	0.001
ScanPos051	1.612	2.449	-75.126	0.010	0.010	0.000
ScanPos052	92.143	-67.465	-147.027	0.010	0.010	0.002
ScanPos053	1.540	-1.257	-15.054	0.010	0.010	0.000
ScanPos054	-98.087	-61.245	51.197	0.010	0.010	0.001
ScanPos055	2.846	7.130	-55.608	0.010	0.010	0.000
ScanPos056	-77.480	-70.651	3.100	0.010	0.010	0.002
ScanPos057	-1.962	-0.958	76.345	0.010	0.010	0.000
ScanPos058	-110.169	81.550	-27.840	0.011	0.010	0.004
ScanPos059	7.325	-0.075	12.167	0.010	0.010	0.000

Name	Roll [deg]	Pitch [deg]	Yaw [deg]	Acc. Roll [deg]	Acc. Pitch [deg]	Acc. Yaw [deg]
ScanPos060	-86.368	33.243	-15.469	0.010	0.010	0.001
ScanPos061	-1.435	3.481	-91.661	0.010	0.010	0.000
ScanPos062	-92.018	-67.579	-19.625	0.010	0.010	0.002
ScanPos063	4.846	8.373	-75.877	0.010	0.010	0.000
ScanPos064	-72.009	-70.833	-23.376	0.010	0.010	0.002
ScanPos065	0.272	-4.621	19.532	0.010	0.010	0.000
ScanPos066	28.437	88.835	47.808	0.028	0.010	0.026
ScanPos067	1.203	-0.781	-176.564	0.010	0.010	0.000
ScanPos068	134.683	-83.679	52.182	0.011	0.010	0.005
ScanPos069	1.925	-2.928	-95.837	0.010	0.010	0.000
ScanPos070	93.786	51.834	-37.371	0.010	0.010	0.001
ScanPos071	-4.107	-2.854	79.687	0.010	0.010	0.000
ScanPos072	86.191	56.737	131.708	0.010	0.010	0.001
ScanPos073	0.715	4.763	-54.311	0.010	0.010	0.000
ScanPos074	101.292	56.712	10.253	0.010	0.010	0.001
ScanPos075	-0.341	0.590	-165.553	0.010	0.010	0.000
ScanPos076	114.029	81.429	-59.929	0.011	0.010	0.005
ScanPos077	0.235	-1.921	67.687	0.010	0.010	0.000
ScanPos078	-170.696	-84.601	-122.890	0.012	0.010	0.007
ScanPos079	3.587	1.639	29.585	0.010	0.010	0.000
ScanPos080	132.708	-87.121	-104.722	0.015	0.010	0.012
ScanPos081	0.184	-7.132	114.784	0.010	0.010	0.000
ScanPos082	-89.940	21.169	87.516	0.010	0.010	0.000
ScanPos083	1.380	4.833	-126.525	0.010	0.010	0.000
ScanPos084	79.938	-76.960	163.892	0.010	0.010	0.003
ScanPos085	-2.165	2.943	-68.279	0.010	0.010	0.000
ScanPos086	83.277	-81.047	-141.176	0.011	0.010	0.005
ScanPos087	1.224	6.118	-134.261	0.010	0.010	0.000
ScanPos088	76.150	-76.842	159.668	0.010	0.010	0.003
ScanPos089	-5.016	-0.148	136.437	0.010	0.010	0.000
ScanPos090	90.266	-47.509	92.321	0.010	0.010	0.001
ScanPos091	4.009	-3.405	46.301	0.010	0.010	0.000
ScanPos092	99.948	-42.729	-4.014	0.010	0.010	0.001
ScanPos093	2.962	1.648	17.524	0.010	0.010	0.000
ScanPos094	-152.692	-88.468	166.221	0.029	0.010	0.027
ScanPos095	2.589	-4.314	39.343	0.010	0.010	0.000
ScanPos096	86.790	75.558	115.291	0.011	0.010	0.004
ScanPos097	-0.968	5.335	-148.307	0.010	0.010	0.001
ScanPos098	-83.895	-77.056	-75.789	0.011	0.010	0.005
ScanPos099	-2.001	-1.289	162.845	0.010	0.010	0.000
ScanPos100	-116.400	-78.217	-90.280	0.011	0.010	0.004

Name	Roll [deg]	Pitch [deg]	Yaw [deg]	Acc. Roll [deg]	Acc. Pitch [deg]	Acc. Yaw [deg]
ScanPos101	-1.657	1.749	137.939	0.010	0.010	0.001
ScanPos102	-94.718	-27.623	170.189	0.010	0.010	0.001
ScanPos103	0.093	2.284	92.465	0.010	0.010	0.001
ScanPos104	104.025	-84.451	-6.533	0.015	0.010	0.011
ScanPos105	1.611	3.530	65.852	0.010	0.010	0.000
ScanPos106	-89.538	-60.438	126.114	0.010	0.010	0.002
ScanPos107	-6.615	2.211	-178.278	0.010	0.010	0.000
ScanPos108	98.519	72.834	-103.963	0.010	0.010	0.002
ScanPos109	2.858	2.896	-22.695	0.010	0.010	0.000
ScanPos110	-89.845	-73.373	48.409	0.010	0.010	0.003

In the coordinate reference system:

Name	Easting [m]	Northing [m]	Height [m]	Acc. East [m]	Acc. North [m]	Acc. Up [m]
ScanPos001	866611.4423	328889.1140	140.2713	0.000	0.000	0.000
ScanPos002	866611.7213	328889.1927	139.9854	0.000	0.000	0.000
ScanPos003	866612.2460	328891.4494	140.1110	0.000	0.000	0.000
ScanPos004	866612.4806	328891.2930	139.8170	0.000	0.000	0.000
ScanPos005	866608.4531	328895.1119	140.2128	0.000	0.000	0.000
ScanPos006	866608.6762	328894.9283	139.9247	0.000	0.000	0.000
ScanPos007	866614.6820	328890.5582	140.2398	0.000	0.000	0.000
ScanPos008	866614.9306	328890.7233	139.9610	0.000	0.000	0.000
ScanPos009	866616.3837	328892.8328	140.2008	0.000	0.000	0.000
ScanPos010	866616.3846	328892.5512	139.9062	0.000	0.000	0.000
ScanPos011	866619.6309	328889.9404	140.3125	0.000	0.000	0.000
ScanPos012	866619.3645	328889.9846	140.0075	0.000	0.000	0.000
ScanPos013	866616.2573	328887.1363	140.4836	0.000	0.000	0.000
ScanPos014	866616.2697	328887.4108	140.1827	0.000	0.000	0.000
ScanPos015	866613.3618	328885.7640	140.2297	0.000	0.000	0.000
ScanPos016	866613.5546	328885.9905	139.9503	0.000	0.000	0.000
ScanPos017	866607.0901	328878.8803	140.0331	0.000	0.000	0.000
ScanPos018	866606.8797	328878.6960	139.7382	0.000	0.000	0.000
ScanPos019	866604.0623	328877.4066	139.6953	0.000	0.000	0.000
ScanPos020	866603.9576	328877.1600	139.3875	0.000	0.000	0.000
ScanPos021	866602.1802	328877.7904	139.5767	0.000	0.000	0.000
ScanPos022	866602.2201	328877.5258	139.2723	0.000	0.000	0.000
ScanPos023	866600.8440	328876.4695	139.4115	0.000	0.000	0.000
ScanPos024	866600.9341	328876.2069	139.1136	0.000	0.000	0.000
ScanPos025	866598.1824	328875.0999	139.3496	0.000	0.000	0.000
ScanPos026	866598.4665	328875.0161	139.0702	0.000	0.000	0.000
ScanPos027	866601.9996	328873.4329	139.2365	0.000	0.000	0.000
ScanPos028	866601.7934	328873.2602	138.9327	0.000	0.000	0.000

Name	Easting [m]	Northing [m]	Height [m]	Acc. East [m]	Acc. North [m]	Acc. Up [m]
ScanPos029	866605.3490	328875.0205	139.5248	0.000	0.000	0.000
ScanPos030	866605.2187	328875.2579	139.2273	0.000	0.000	0.000
ScanPos031	866604.1307	328870.8060	139.1686	0.000	0.000	0.000
ScanPos032	866603.8587	328870.8519	138.8691	0.000	0.000	0.000
ScanPos033	866596.5402	328865.9214	138.7699	0.000	0.000	0.000
ScanPos034	866596.6050	328866.2069	138.4867	0.000	0.000	0.000
ScanPos035	866598.1425	328868.4403	138.9383	0.000	0.000	0.000
ScanPos036	866598.1859	328868.7400	138.6676	0.000	0.000	0.000
ScanPos037	866590.1436	328875.0117	139.1604	0.000	0.000	0.000
ScanPos038	866590.4069	328874.8520	138.8940	0.000	0.000	0.000
ScanPos039	866594.1709	328872.1035	139.0027	0.000	0.000	0.000
ScanPos040	866594.4558	328872.0232	138.7232	0.000	0.000	0.000
ScanPos041	866601.0347	328867.2283	138.9379	0.000	0.000	0.000
ScanPos042	866600.9532	328867.5119	138.6556	0.000	0.000	0.000
ScanPos043	866606.1922	328865.1875	139.0625	0.000	0.000	0.000
ScanPos044	866605.9851	328865.0277	138.7576	0.000	0.000	0.000
ScanPos045	866605.7766	328858.1726	138.6631	0.000	0.000	0.000
ScanPos046	866605.5208	328858.1266	138.3490	0.000	0.000	0.000
ScanPos047	866600.3327	328855.6661	138.1277	0.000	0.000	0.000
ScanPos048	866600.0831	328855.5212	137.8467	0.000	0.000	0.000
ScanPos049	866601.2618	328852.4423	137.7865	0.000	0.000	0.000
ScanPos050	866601.0119	328852.6177	137.5175	0.000	0.000	0.000
ScanPos051	866605.0988	328849.7016	137.7935	0.000	0.000	0.000
ScanPos052	866604.9431	328849.9437	137.5109	0.000	0.000	0.000
ScanPos053	866607.6022	328844.1816	137.5390	0.000	0.000	0.000
ScanPos054	866607.4131	328844.3853	137.2402	0.000	0.000	0.000
ScanPos055	866600.7474	328842.3651	137.1163	0.000	0.000	0.000
ScanPos056	866600.6664	328842.6703	136.8604	0.000	0.000	0.000
ScanPos057	866597.5891	328850.9155	137.6482	0.000	0.000	0.000
ScanPos058	866597.6369	328851.1946	137.3541	0.000	0.000	0.000
ScanPos059	866595.4154	328851.1282	137.6171	0.000	0.000	0.000
ScanPos060	866595.4908	328851.4297	137.3567	0.000	0.000	0.000
ScanPos061	866590.6923	328846.5194	137.2331	0.000	0.000	0.000
ScanPos062	866590.7878	328846.7962	136.9507	0.000	0.000	0.000
ScanPos063	866589.9702	328850.1221	137.4625	0.000	0.000	0.000
ScanPos064	866590.0134	328850.4438	137.2153	0.000	0.000	0.000
ScanPos065	866584.3415	328852.2299	137.3372	0.000	0.000	0.000
ScanPos066	866584.6257	328852.3320	137.0639	0.000	0.000	0.000
ScanPos067	866591.1974	328854.7702	137.8028	0.000	0.000	0.000
ScanPos068	866591.4713	328854.7969	137.5024	0.000	0.000	0.000
ScanPos069	866598.6858	328858.3138	138.3569	0.000	0.000	0.000

Name	Easting [m]	Northing [m]	Height [m]	Acc. East [m]	Acc. North [m]	Acc. Up [m]
ScanPos070	866598.5126	328858.0853	138.0670	0.000	0.000	0.000
ScanPos071	866598.3612	328861.7500	138.7856	0.000	0.000	0.000
ScanPos072	866598.5814	328861.9552	138.5180	0.000	0.000	0.000
ScanPos073	866592.4684	328860.6200	138.2860	0.000	0.000	0.000
ScanPos074	866592.4629	328860.3629	137.9784	0.000	0.000	0.000
ScanPos075	866580.6905	328857.4302	137.6522	0.000	0.000	0.000
ScanPos076	866580.4140	328857.4024	137.3569	0.000	0.000	0.000
ScanPos077	866570.5424	328862.1057	137.8486	0.000	0.000	0.000
ScanPos078	866570.4337	328861.8593	137.5447	0.000	0.000	0.000
ScanPos079	866572.6969	328858.6907	137.7586	0.000	0.000	0.000
ScanPos080	866572.4356	328858.5710	137.4707	0.000	0.000	0.000
ScanPos081	866573.3167	328852.1551	137.1104	0.000	0.000	0.000
ScanPos082	866573.0213	328852.1977	136.8347	0.000	0.000	0.000
ScanPos083	866567.6059	328848.9084	136.7695	0.000	0.000	0.000
ScanPos084	866567.7466	328849.1750	136.5030	0.000	0.000	0.000
ScanPos085	866572.6055	328839.4057	136.3659	0.000	0.000	0.000
ScanPos086	866572.4409	328839.6504	136.0927	0.000	0.000	0.000
ScanPos087	866568.0022	328839.8106	136.0812	0.000	0.000	0.000
ScanPos088	866568.1812	328840.0602	135.8189	0.000	0.000	0.000
ScanPos089	866565.6625	328851.2974	136.9377	0.000	0.000	0.000
ScanPos090	866565.9579	328851.3280	136.6587	0.000	0.000	0.000
ScanPos091	866561.4331	328854.4535	136.8821	0.000	0.000	0.000
ScanPos092	866561.4447	328854.2022	136.5684	0.000	0.000	0.000
ScanPos093	866559.8013	328861.2982	137.6980	0.000	0.000	0.000
ScanPos094	866559.5171	328861.2440	137.4125	0.000	0.000	0.000
ScanPos095	866554.0406	328859.3344	137.6377	0.000	0.000	0.000
ScanPos096	866554.2943	328859.4911	137.3632	0.000	0.000	0.000
ScanPos097	866549.4821	328860.3031	137.5679	0.000	0.000	0.000
ScanPos098	866549.7636	328860.4177	137.2968	0.000	0.000	0.000
ScanPos099	866553.3383	328865.9417	138.2418	0.000	0.000	0.000
ScanPos100	866553.5862	328865.8298	137.9379	0.000	0.000	0.000
ScanPos101	866557.5459	328873.6406	139.0084	0.000	0.000	0.000
ScanPos102	866557.5004	328873.3681	138.7090	0.000	0.000	0.000
ScanPos103	866557.4350	328871.0980	138.8716	0.000	0.000	0.000
ScanPos104	866557.4725	328870.8103	138.5870	0.000	0.000	0.000
ScanPos105	866560.6775	328867.2548	138.5583	0.000	0.000	0.000
ScanPos106	866560.4385	328867.0767	138.2807	0.000	0.000	0.000
ScanPos107	866561.4887	328864.1726	138.0649	0.000	0.000	0.000
ScanPos108	866561.2389	328864.3093	137.7752	0.000	0.000	0.000
ScanPos109	866563.2394	328860.9696	137.6014	0.000	0.000	0.000
ScanPos110	866563.0226	328861.1724	137.3249	0.000	0.000	0.000

4.3 Changes in Scan Positions

The following table reflects the change of scan positions with respect to position and orientation in comparison to positions and orientations wrt to prior to multi-station adjustment.

In the PRCS coordinate system:

Name	Changes wrt to prior to multi-station adjustment					
	X [m]	Y [m]	Z [m]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos001	0.0001	0.0002	-0.0001	0.0018	0.0032	-0.0023
ScanPos002	-0.0003	0.0001	-0.0006	-0.0451	-0.0085	-0.0400
ScanPos003	0.0018	0.0011	-0.0015	0.0182	-0.0022	-0.0075
ScanPos004	-0.0014	0.0012	-0.0026	-0.0815	0.0308	0.0842
ScanPos005	0.0003	0.0011	-0.0001	-0.0055	-0.0145	0.0014
ScanPos006	-0.0016	0.0005	-0.0016	-0.0048	-0.0083	0.0055
ScanPos007	0.0008	0.0011	-0.0008	0.0082	-0.0142	0.0006
ScanPos008	0.0029	0.0020	0.0011	0.1226	-0.0086	-0.1237
ScanPos009	0.0027	0.0006	-0.0022	0.0001	0.0243	0.0011
ScanPos010	0.0011	0.0003	-0.0030	-0.0096	0.0183	0.0102
ScanPos011	0.0033	0.0005	-0.0048	-0.0123	0.0226	0.0013
ScanPos012	0.0015	-0.0017	-0.0037	0.2628	0.0031	-0.2661
ScanPos013	0.0014	-0.0007	0.0003	-0.0215	0.0180	0.0018
ScanPos014	-0.0002	-0.0011	-0.0017	-0.0222	0.0269	-0.0033
ScanPos015	0.0014	-0.0005	0.0012	-0.0020	-0.0185	-0.0035
ScanPos016	0.0006	-0.0015	0.0002	-0.2227	-0.0005	0.2174
ScanPos017	0.0008	0.0022	0.0001	0.0126	-0.0116	-0.0050
ScanPos018	0.0019	0.0019	-0.0016	0.0201	-0.0088	-0.0029
ScanPos019	0.0010	0.0022	0.0018	0.0066	-0.0096	-0.0032
ScanPos020	0.0013	0.0025	-0.0004	0.0152	0.0023	0.0033
ScanPos021	-0.0003	0.0020	0.0022	0.0162	0.0040	-0.0031
ScanPos022	0.0002	0.0019	0.0025	-0.0919	0.0069	0.0931
ScanPos023	-0.0006	0.0022	0.0026	0.0081	-0.0015	0.0012
ScanPos024	0.0008	0.0010	0.0012	-0.0278	0.0004	0.0286
ScanPos025	-0.0008	0.0021	0.0028	0.0122	-0.0052	0.0003
ScanPos026	0.0010	0.0016	0.0014	-0.0015	0.0036	0.0026
ScanPos027	-0.0001	0.0022	0.0008	0.0120	0.0063	-0.0008
ScanPos028	0.0002	0.0017	-0.0004	0.0103	0.0053	0.0010
ScanPos029	0.0010	0.0010	0.0006	-0.0105	0.0191	-0.0029
ScanPos030	0.0006	0.0020	0.0002	0.0024	0.0109	-0.0043
ScanPos031	0.0014	0.0009	0.0009	-0.0014	0.0097	-0.0033
ScanPos032	0.0013	0.0002	0.0008	0.0116	0.0117	-0.0130
ScanPos033	0.0005	0.0006	0.0023	0.0023	0.0045	-0.0021
ScanPos034	0.0000	0.0011	0.0022	-0.0020	-0.0006	-0.0035
ScanPos035	0.0004	0.0011	0.0026	0.0048	0.0057	-0.0021

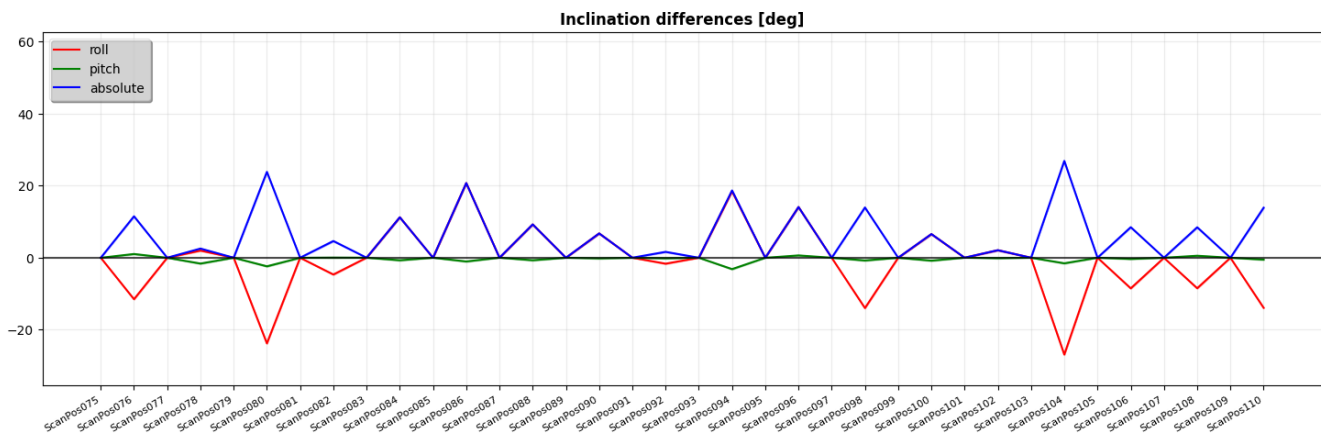
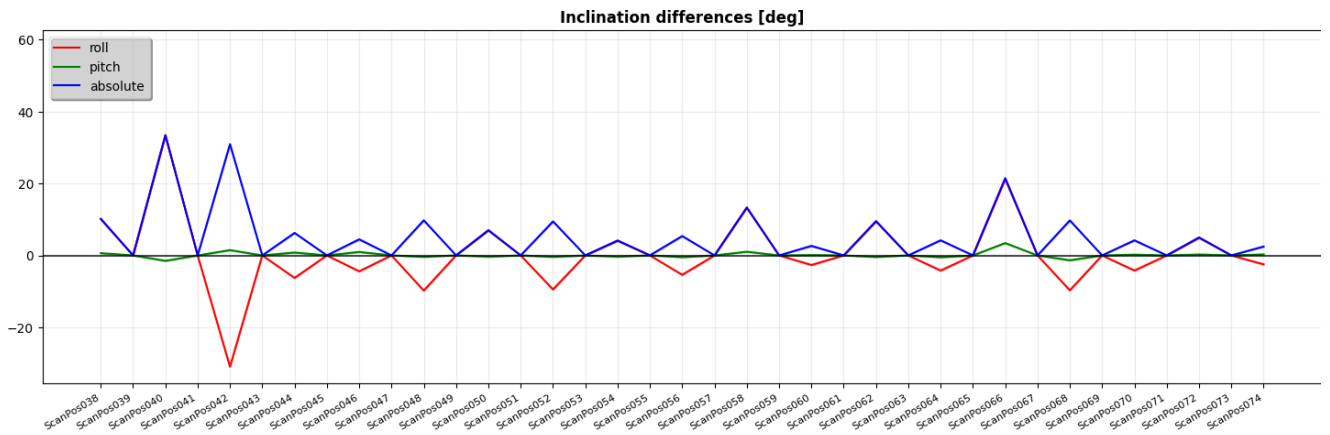
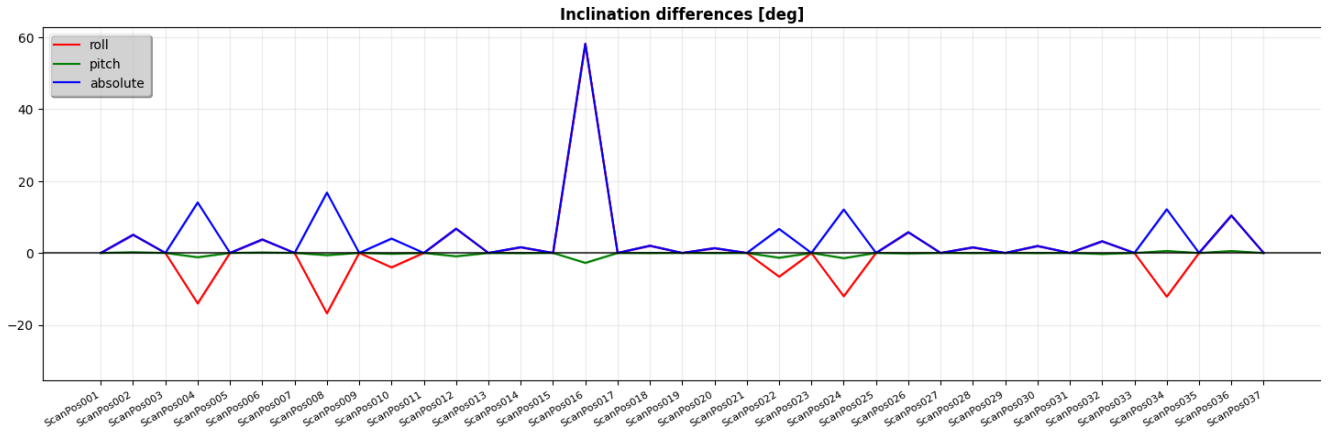
Changes wrt to prior to multi-station adjustment						
Name	X [m]	Y [m]	Z [m]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos036	-0.0001	0.0015	0.0030	0.0034	-0.0030	0.0006
ScanPos037	0.0006	0.0025	0.0025	0.0012	0.0029	-0.0002
ScanPos038	0.0022	0.0021	0.0020	-0.0306	-0.0099	-0.0317
ScanPos039	-0.0005	0.0008	0.0021	0.0063	-0.0053	0.0004
ScanPos040	0.0013	0.0005	0.0002	0.0244	-0.0039	-0.0263
ScanPos041	0.0009	0.0010	0.0023	0.0073	-0.0012	-0.0030
ScanPos042	0.0012	0.0006	0.0023	0.0854	-0.0015	0.0808
ScanPos043	0.0013	0.0000	0.0024	0.0047	-0.0086	-0.0047
ScanPos044	-0.0000	0.0003	0.0023	-0.0310	0.0056	-0.0313
ScanPos045	0.0001	0.0011	0.0052	0.0047	-0.0077	-0.0010
ScanPos046	0.0009	0.0007	0.0055	-0.0381	0.0000	-0.0398
ScanPos047	0.0015	0.0018	0.0047	-0.0014	0.0033	-0.0025
ScanPos048	0.0019	0.0018	0.0041	0.0021	0.0009	-0.0043
ScanPos049	0.0008	0.0008	0.0057	-0.0008	-0.0011	-0.0027
ScanPos050	0.0002	0.0011	0.0051	-0.0105	-0.0074	0.0066
ScanPos051	0.0010	0.0014	0.0066	-0.0011	-0.0030	-0.0019
ScanPos052	-0.0000	0.0006	0.0071	0.0101	-0.0082	-0.0132
ScanPos053	-0.0004	0.0017	0.0113	-0.0037	0.0053	-0.0015
ScanPos054	-0.0006	0.0007	0.0091	-0.0002	0.0047	-0.0038
ScanPos055	-0.0015	0.0021	0.0068	-0.0018	0.0050	-0.0057
ScanPos056	-0.0019	0.0021	0.0064	0.0324	0.0157	-0.0360
ScanPos057	0.0003	0.0019	0.0039	0.0050	-0.0048	-0.0034
ScanPos058	0.0001	0.0017	0.0038	-0.0156	0.0033	-0.0185
ScanPos059	-0.0006	0.0027	0.0052	0.0067	-0.0000	-0.0030
ScanPos060	0.0003	0.0034	0.0040	0.0112	-0.0008	0.0032
ScanPos061	-0.0001	0.0029	0.0028	-0.0022	0.0088	-0.0039
ScanPos062	0.0004	0.0015	0.0023	0.0151	-0.0071	-0.0205
ScanPos063	0.0005	0.0026	0.0016	0.0057	0.0034	-0.0022
ScanPos064	0.0009	0.0028	0.0022	0.0349	0.0040	-0.0385
ScanPos065	0.0010	0.0027	0.0026	0.0060	-0.0030	-0.0022
ScanPos066	0.0010	0.0044	0.0028	0.3291	-0.0089	0.3236
ScanPos067	0.0003	0.0031	0.0044	-0.0061	-0.0041	-0.0028
ScanPos068	0.0020	0.0035	0.0026	-0.0229	-0.0093	0.0203
ScanPos069	0.0005	0.0015	0.0047	-0.0040	-0.0023	-0.0027
ScanPos070	-0.0002	0.0018	0.0046	-0.0093	0.0039	-0.0086
ScanPos071	0.0005	0.0023	0.0038	0.0005	-0.0072	-0.0021
ScanPos072	0.0003	0.0020	0.0025	0.0208	0.0093	0.0149
ScanPos073	-0.0021	0.0042	0.0041	-0.0020	-0.0024	0.0003
ScanPos074	-0.0037	0.0054	0.0016	0.0058	0.0074	0.0045
ScanPos075	-0.0001	0.0030	0.0035	-0.0014	-0.0038	-0.0015

Changes wrt to prior to multi-station adjustment						
Name	X [m]	Y [m]	Z [m]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos076	0.0012	0.0029	0.0044	-0.0178	0.0011	-0.0193
ScanPos077	0.0025	0.0022	0.0035	-0.0076	0.0070	-0.0011
ScanPos078	0.0008	0.0035	0.0029	-0.0051	-0.0103	0.0013
ScanPos079	0.0020	0.0031	0.0038	-0.0054	-0.0018	-0.0022
ScanPos080	0.0026	0.0028	0.0027	0.1590	-0.0059	-0.1611
ScanPos081	0.0014	0.0043	0.0030	0.0015	-0.0096	-0.0027
ScanPos082	0.0015	0.0050	0.0032	0.0037	-0.0031	0.0015
ScanPos083	0.0026	0.0041	0.0027	-0.0011	0.0084	-0.0023
ScanPos084	0.0036	0.0035	0.0021	-0.0108	0.0031	0.0091
ScanPos085	0.0023	0.0057	0.0002	0.0060	0.0165	-0.0012
ScanPos086	0.0029	0.0050	0.0004	-0.0401	0.0016	0.0396
ScanPos087	0.0010	0.0052	0.0004	-0.0085	0.0053	-0.0024
ScanPos088	0.0015	0.0054	0.0002	-0.0215	-0.0097	0.0185
ScanPos089	0.0019	0.0034	0.0045	-0.0037	0.0015	-0.0017
ScanPos090	0.0025	0.0041	0.0042	-0.0077	-0.0070	0.0013
ScanPos091	0.0033	0.0036	0.0023	0.0011	-0.0072	0.0003
ScanPos092	0.0016	0.0037	0.0029	0.0090	0.0081	-0.0072
ScanPos093	0.0032	0.0038	0.0017	-0.0009	-0.0019	-0.0026
ScanPos094	0.0020	0.0033	0.0016	0.4362	-0.0113	-0.4377
ScanPos095	0.0031	0.0042	0.0003	-0.0083	-0.0053	-0.0026
ScanPos096	0.0023	0.0027	0.0009	0.0147	0.0090	0.0129
ScanPos097	0.0035	0.0034	-0.0018	0.0115	0.0092	-0.0032
ScanPos098	0.0029	0.0038	0.0004	0.0242	-0.0032	-0.0266
ScanPos099	0.0029	0.0039	0.0005	0.0059	0.0009	-0.0060
ScanPos100	0.0033	0.0028	0.0024	0.0231	-0.0077	-0.0286
ScanPos101	0.0035	0.0025	0.0034	0.0123	0.0088	-0.0031
ScanPos102	0.0044	0.0030	0.0011	0.0070	0.0048	-0.0059
ScanPos103	0.0042	0.0040	0.0033	-0.0077	-0.0032	-0.0038
ScanPos104	0.0038	0.0031	0.0044	-0.0198	-0.0007	0.0117
ScanPos105	0.0028	0.0040	0.0024	-0.0032	0.0072	-0.0033
ScanPos106	0.0041	0.0037	0.0027	-0.0074	0.0051	-0.0014
ScanPos107	0.0031	0.0031	0.0021	0.0074	-0.0051	-0.0021
ScanPos108	0.0025	0.0036	0.0026	0.0034	-0.0009	-0.0007
ScanPos109	0.0029	0.0029	0.0040	-0.0059	0.0003	-0.0027
ScanPos110	0.0019	0.0029	0.0025	0.0231	-0.0079	-0.0239

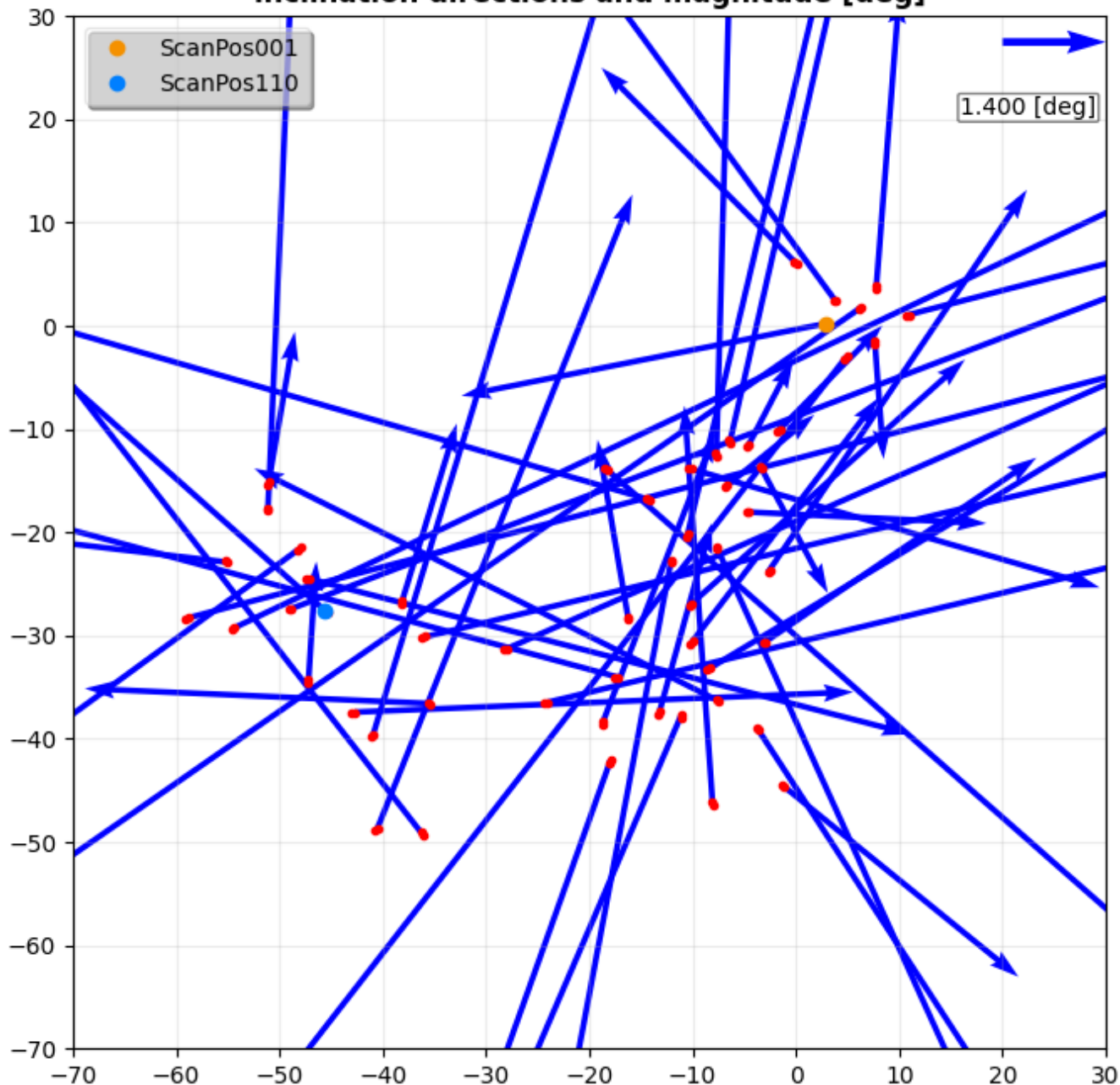
4.4 Residuals

For an assessment of the quality of the multi-station adjustment the following residual deviations (in short residuals) can be observed.

4.4.1 Orientation Measurements



inclination directions and magnitude [deg]



Name	Deviations in PRCS			a priori Accuracies		
	Roll [deg]	Pitch [deg]	Yaw [deg]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos001	-0.0021	0.0030	-1.7078	0.012	0.012	10.000
ScanPos002	5.0654	0.1953	12.6146	0.143	0.143	10.000
ScanPos003	-0.0078	0.0001	-0.6385	0.010	0.010	10.000
ScanPos004	-14.0396	-1.1826	17.9099	0.142	0.142	10.000
ScanPos005	0.0007	-0.0017	-0.8381	0.013	0.013	10.000
ScanPos006	3.7532	0.1341	7.4127	0.143	0.143	10.000
ScanPos007	0.0029	0.0043	0.2096	0.013	0.013	10.000
ScanPos008	-16.7921	-0.6002	26.2548	0.143	0.143	10.000
ScanPos009	0.0030	0.0064	-1.8343	0.008	0.008	10.000

Name	Deviations in PRCS			a priori Accuracies		
	Roll [deg]	Pitch [deg]	Yaw [deg]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos010	-4.0086	-0.2253	2.2211	0.142	0.142	10.000
ScanPos011	0.0033	-0.0029	-2.2240	0.011	0.011	10.000
ScanPos012	6.7449	-0.9152	-15.1198	0.139	0.139	10.000
ScanPos013	-0.0133	-0.0129	-3.1665	0.018	0.018	10.000
ScanPos014	1.5990	-0.0311	-2.0741	0.139	0.139	10.000
ScanPos015	-0.0059	0.0061	0.2457	0.012	0.012	10.000
ScanPos016	58.1984	-2.7470	-48.5916	0.143	0.143	10.000
ScanPos017	-0.0031	-0.0130	0.3071	0.014	0.014	10.000
ScanPos018	2.0195	-0.0108	-2.7219	0.141	0.141	10.000
ScanPos019	-0.0098	0.0117	-0.8235	0.015	0.015	10.000
ScanPos020	1.3425	-0.0067	-1.2222	0.138	0.138	10.000
ScanPos021	-0.0060	-0.0043	-1.1323	0.010	0.010	10.000
ScanPos022	-6.5906	-1.3237	6.1406	0.139	0.139	10.000
ScanPos023	0.0029	-0.0017	-0.7820	0.008	0.008	10.000
ScanPos024	-12.0461	-1.4431	12.9544	0.141	0.141	10.000
ScanPos025	-0.0063	0.0129	-1.3537	0.012	0.012	10.000
ScanPos026	5.7727	-0.1215	3.3987	0.143	0.143	10.000
ScanPos027	-0.0045	0.0042	-1.2206	0.010	0.010	10.000
ScanPos028	1.5603	-0.0175	-3.4154	0.139	0.139	10.000
ScanPos029	-0.0176	0.0110	-2.0184	0.010	0.010	10.000
ScanPos030	1.9432	-0.0196	-7.8111	0.141	0.141	10.000
ScanPos031	-0.0025	-0.0017	-2.3827	0.009	0.009	10.000
ScanPos032	3.2580	-0.2669	-11.5492	0.140	0.140	10.000
ScanPos033	-0.0137	-0.0061	-1.4422	0.012	0.012	10.000
ScanPos034	-12.1530	0.5546	-8.0146	0.143	0.143	10.000
ScanPos035	0.0006	-0.0116	-1.3282	0.015	0.015	10.000
ScanPos036	10.4160	0.5449	12.4677	0.143	0.143	10.000
ScanPos037	-0.0036	-0.0162	-2.7581	0.017	0.017	10.000
ScanPos038	10.1678	0.6290	14.2859	0.142	0.142	10.000
ScanPos039	-0.0129	0.0016	-0.2781	0.015	0.015	10.000
ScanPos040	33.4445	-1.5014	-28.5421	0.143	0.143	10.000
ScanPos041	-0.0131	-0.0097	-0.4100	0.014	0.014	10.000
ScanPos042	-30.9476	1.4781	-35.3512	0.143	0.143	10.000
ScanPos043	0.0058	0.0025	0.1609	0.013	0.013	10.000
ScanPos044	-6.2452	0.8076	-9.7477	0.139	0.139	10.000
ScanPos045	-0.0060	0.0121	0.2125	0.013	0.013	10.000
ScanPos046	-4.4142	0.9673	-10.3679	0.137	0.137	10.000
ScanPos047	0.0024	0.0062	-1.8032	0.012	0.012	10.000
ScanPos048	-9.7693	-0.3869	4.3257	0.143	0.143	10.000
ScanPos049	0.0040	0.0161	-1.1020	0.019	0.019	10.000

Name	Deviations in PRCS			a priori Accuracies		
	Roll [deg]	Pitch [deg]	Yaw [deg]	Roll [deg]	Pitch [deg]	Yaw [deg]
ScanPos050	7.0068	-0.3274	-15.8659	0.143	0.143	10.000
ScanPos051	-0.0016	0.0045	-0.7140	0.012	0.012	10.000
ScanPos052	-9.4621	-0.3953	2.4131	0.143	0.143	10.000
ScanPos053	-0.0073	-0.0037	-2.4471	0.010	0.010	10.000
ScanPos054	4.1262	-0.3290	-12.6088	0.141	0.141	10.000
ScanPos055	0.0038	0.0193	-0.8866	0.019	0.019	10.000
ScanPos056	-5.3906	-0.4746	0.4740	0.140	0.140	10.000
ScanPos057	-0.0063	0.0020	-2.0267	0.010	0.010	10.000
ScanPos058	13.3128	1.0309	14.8058	0.142	0.142	10.000
ScanPos059	0.0077	-0.0027	-2.0117	0.019	0.019	10.000
ScanPos060	-2.6528	0.0929	2.4056	0.142	0.142	10.000
ScanPos061	-0.0117	0.0066	0.1656	0.013	0.013	10.000
ScanPos062	9.5175	-0.4213	-3.2553	0.143	0.143	10.000
ScanPos063	0.0106	0.0156	-0.8239	0.022	0.022	10.000
ScanPos064	-4.2002	-0.5036	6.4655	0.138	0.138	10.000
ScanPos065	-0.0128	-0.0080	-2.8955	0.014	0.014	10.000
ScanPos066	21.2580	3.4433	29.9280	0.143	0.143	10.000
ScanPos067	0.0090	-0.0075	1.1472	0.009	0.009	10.000
ScanPos068	-9.6963	-1.3454	16.5032	0.140	0.140	10.000
ScanPos069	-0.0040	-0.0129	-0.3290	0.013	0.013	10.000
ScanPos070	-4.1969	0.2235	-6.0103	0.142	0.142	10.000
ScanPos071	-0.0160	-0.0025	-2.0917	0.015	0.015	10.000
ScanPos072	4.9686	0.2607	13.3529	0.142	0.142	10.000
ScanPos073	-0.0059	0.0126	-0.4713	0.015	0.015	10.000
ScanPos074	-2.4762	0.2796	-1.7901	0.138	0.138	10.000
ScanPos075	0.0056	-0.0038	0.4426	0.008	0.008	10.000
ScanPos076	-11.5093	1.0438	-16.9555	0.141	0.141	10.000
ScanPos077	-0.0027	-0.0084	-2.0503	0.010	0.010	10.000
ScanPos078	2.0007	-1.6077	-3.3862	0.139	0.139	10.000
ScanPos079	0.0121	0.0038	-2.5801	0.013	0.013	10.000
ScanPos080	-23.7825	-2.3698	19.3343	0.142	0.142	10.000
ScanPos081	-0.0048	-0.0185	0.2289	0.018	0.018	10.000
ScanPos082	-4.6519	0.0470	-9.7105	0.143	0.143	10.000
ScanPos083	0.0093	0.0132	0.0649	0.015	0.015	10.000
ScanPos084	11.2440	-0.6938	-2.6965	0.142	0.142	10.000
ScanPos085	-0.0029	0.0064	-1.1562	0.013	0.013	10.000
ScanPos086	20.7441	-1.0249	-28.1859	0.143	0.143	10.000
ScanPos087	0.0013	0.0187	0.5063	0.017	0.017	10.000
ScanPos088	9.2619	-0.6876	0.6077	0.141	0.141	10.000
ScanPos089	-0.0092	0.0029	0.4578	0.015	0.015	10.000

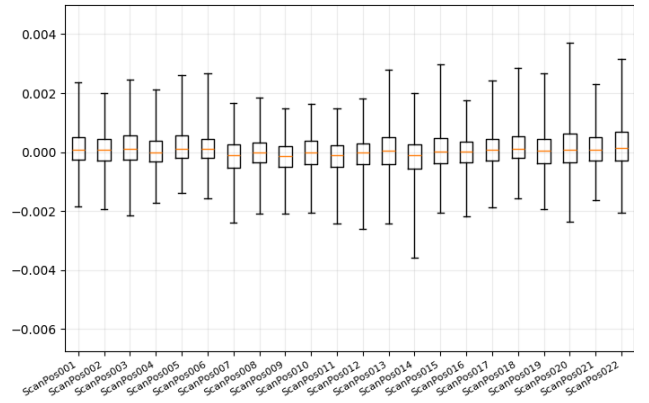
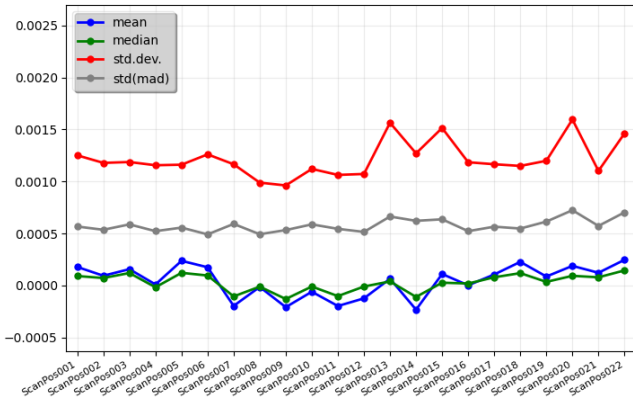
Name	Deviations in PRCS			a priori Accuracies			
	Roll [deg]	Pitch [deg]	Yaw [deg]	Roll [deg]	Pitch [deg]	Yaw [deg]	
ScanPos090	6.7634	-0.1649	3.7778	0.143	0.143	10.000	
ScanPos091	0.0136	-0.0134	-2.4503	0.015	0.015	10.000	
ScanPos092	-1.6429	-0.1441	-0.3204	0.136	0.136	10.000	
ScanPos093	0.0016	0.0067	-2.9074	0.012	0.012	10.000	
ScanPos094	18.4539	-3.1503	-24.2092	0.143	0.143	10.000	
ScanPos095	0.0018	-0.0113	-2.7060	0.015	0.015	10.000	
ScanPos096	14.0923	0.6488	23.7698	0.143	0.143	10.000	
ScanPos097	-0.0074	0.0102	0.6167	0.016	0.016	10.000	
ScanPos098	-13.9676	-0.7533	23.6285	0.143	0.143	10.000	
ScanPos099	-0.0104	-0.0058	1.4608	0.011	0.011	10.000	
ScanPos100	6.5711	-0.8016	-1.3031	0.139	0.139	10.000	
ScanPos101	0.0032	0.0235	0.0717	0.011	0.011	10.000	
ScanPos102	2.1045	-0.1097	-0.3011	0.140	0.140	10.000	
ScanPos103	0.0037	0.0062	-0.4398	0.011	0.011	10.000	
ScanPos104	-26.8908	-1.5365	27.1094	0.143	0.143	10.000	
ScanPos105	0.0109	0.0090	-1.1050	0.013	0.013	10.000	
ScanPos106	-8.4912	-0.3214	2.5390	0.143	0.143	10.000	
ScanPos107	-0.0192	0.0049	1.0466	0.018	0.018	10.000	
ScanPos108	-8.4653	0.5598	-17.2258	0.142	0.142	10.000	
ScanPos109	0.0007	0.0086	-2.8088	0.013	0.013	10.000	
ScanPos110	-13.9059	-0.5131	2.1543	0.143	0.143	10.000	
Statistics	mean	median	std. dev.	std(mad)	min	max	count
Roll [deg]	0.2563	-0.0023	10.0569	1.0095	-30.9476	58.1984	110
Pitch [deg]	-0.1404	-0.0028	0.7453	0.0276	-3.1503	3.4433	110
Yaw [deg]	-0.6718	-0.8310	11.0638	2.7728	-48.5916	29.9280	110
Roll [l]	1.662	-0.189	70.481	8.476	-216.383	406.424	110
Pitch [l]	-0.938	-0.141	5.282	1.405	-22.084	24.124	110
Yaw [l]	-0.067	-0.083	1.106	0.277	-4.859	2.993	110

4.4.2 Plane Patches

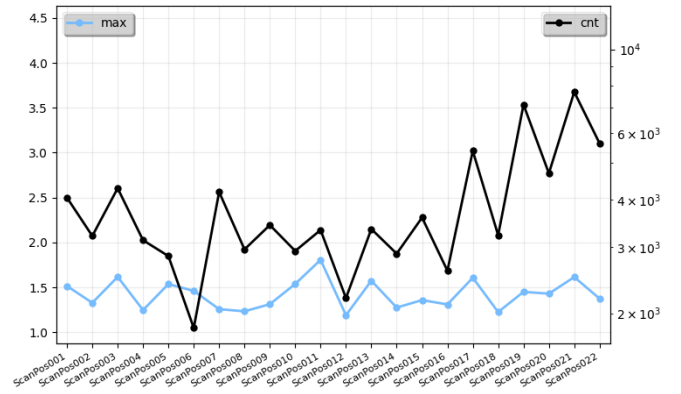
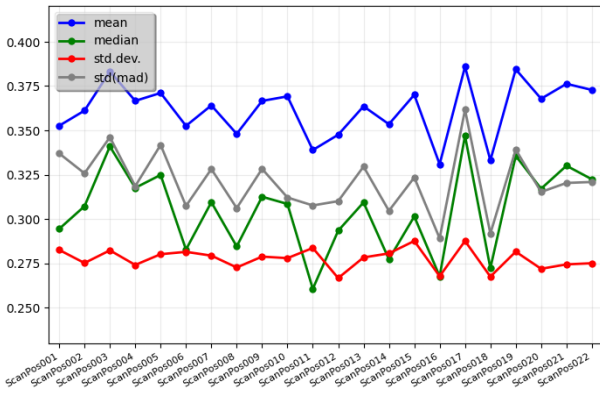
The subsequent figures show the residuals in distance and angle of all plane patches per scan position, expressed as mean, median, standard deviation and median absolute deviation (std(mad)). Additionally, the figures depict the number of plane patches available for every scan position.

For the residuals in distance of the plane patches the boxplot shows the median as orange line. The box is defined by the quantil 25% and 75%. This translates to 50 percent of the total amount of points lie in the range shown by the box. The whiskers are at the quantil 2.5% and 97.5%, containing 95% of all points.

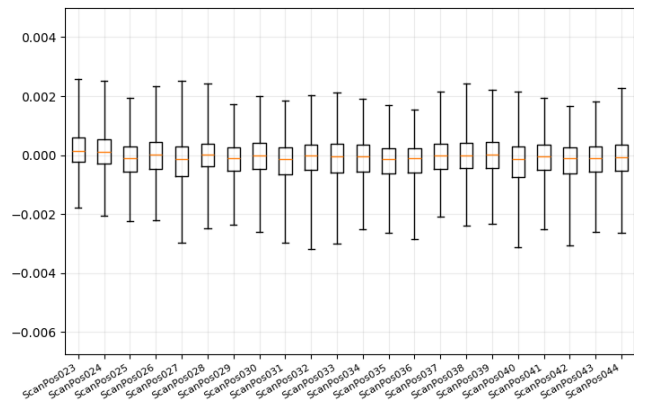
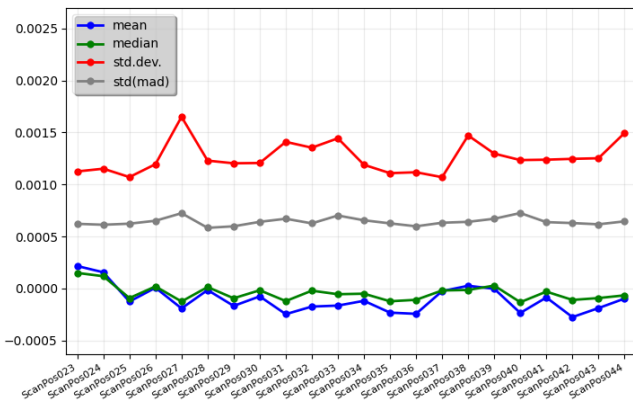
residuals in distance [m]



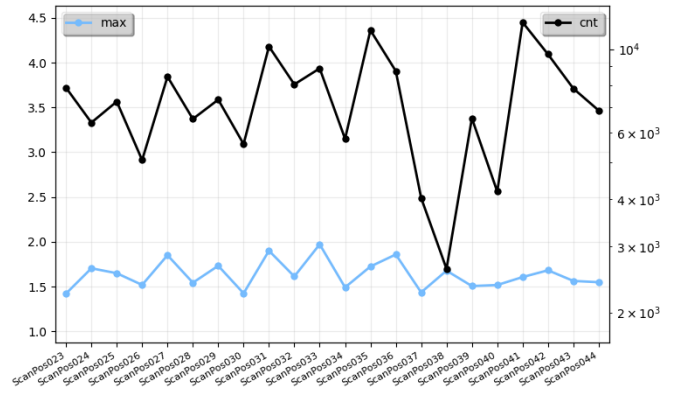
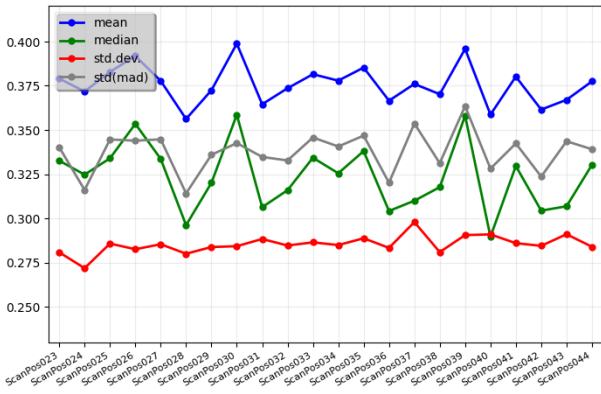
residuals in angle [deg]



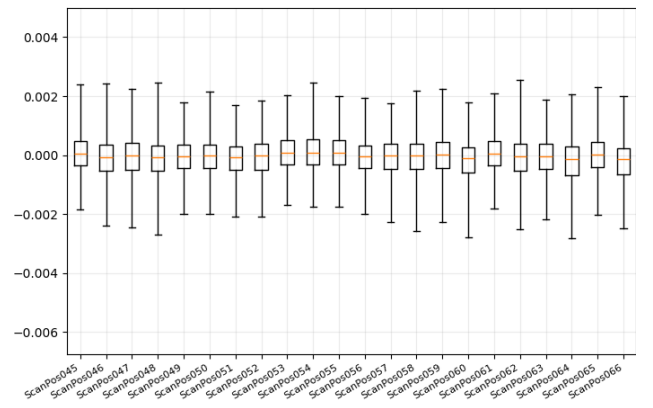
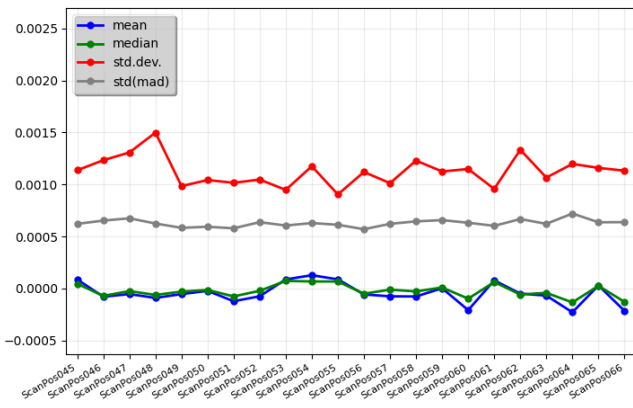
residuals in distance [m]



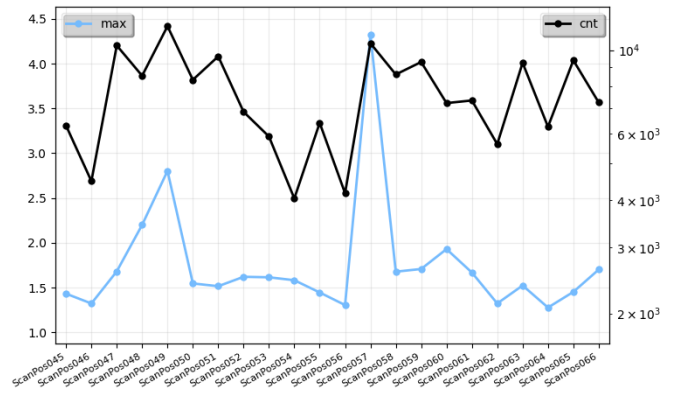
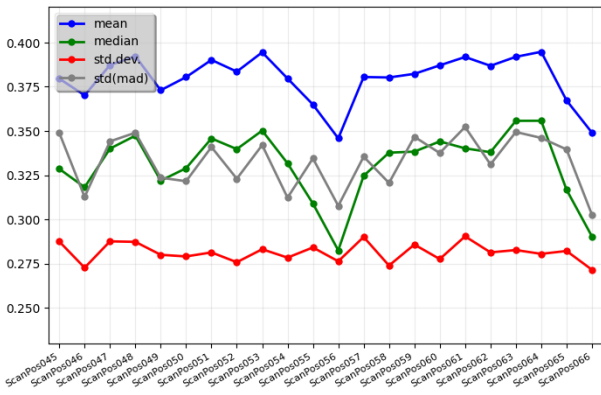
residuals in angle [deg]



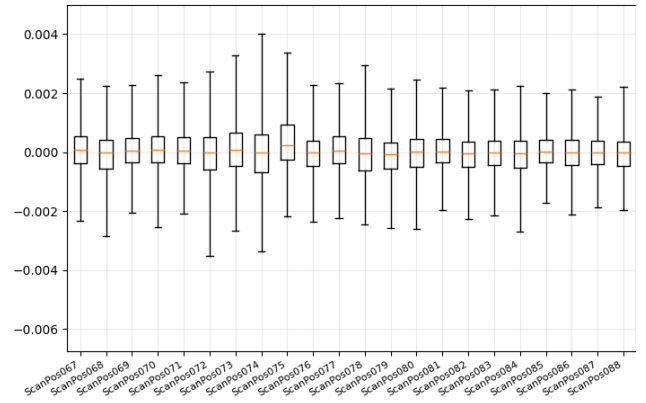
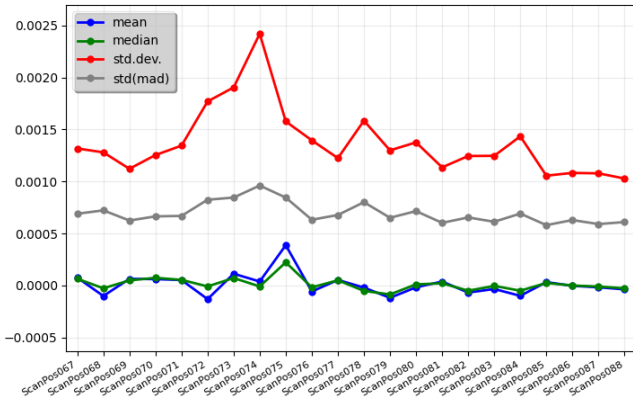
residuals in distance [m]



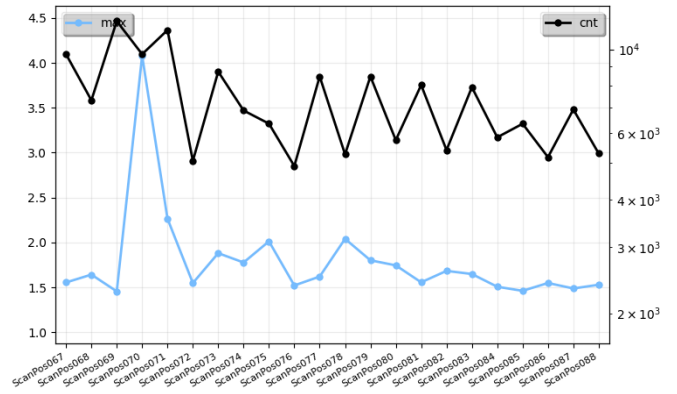
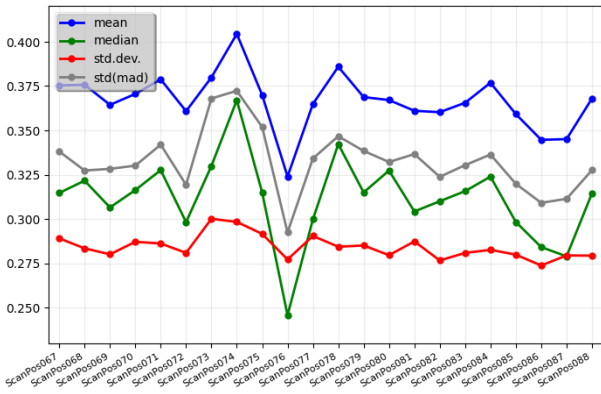
residuals in angle [deg]



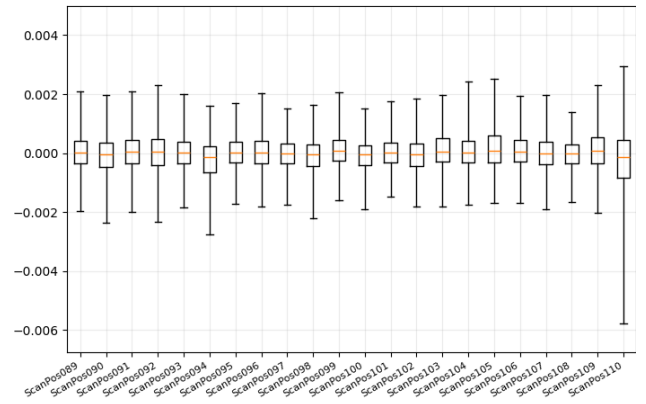
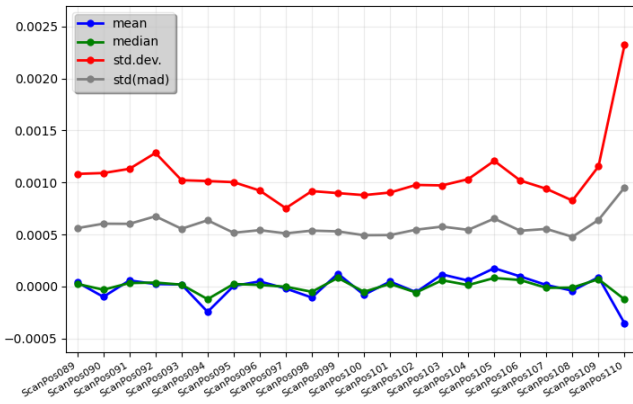
residuals in distance [m]



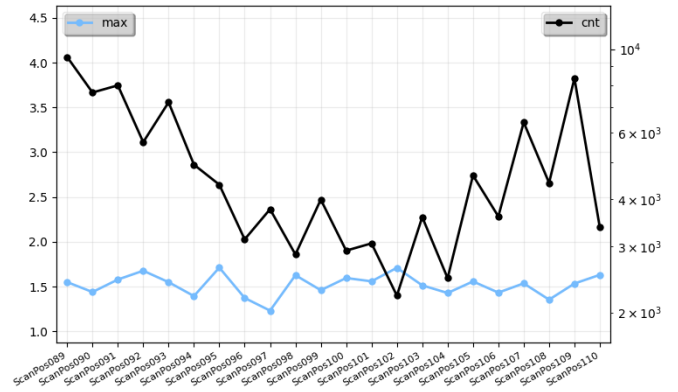
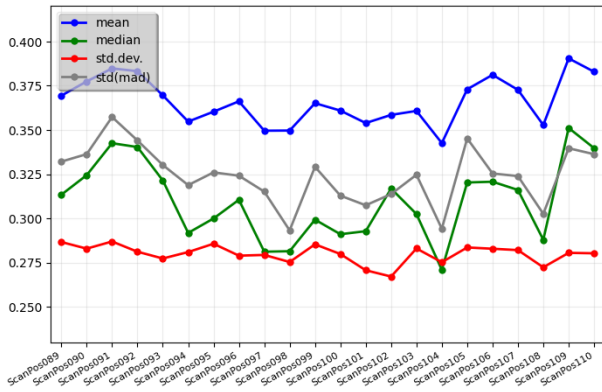
residuals in angle [deg]



residuals in distance [m]



residuals in angle [deg]



Plane Patch Residuals of Distance [m]											
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos001	4048	0.0002	0.0001	0.0013	0.0006	-0.0075	-0.0019	-0.0003	0.0005	0.0024	0.0152
ScanPos002	3204	0.0001	0.0001	0.0012	0.0005	-0.0133	-0.0019	-0.0003	0.0005	0.0020	0.0117
ScanPos003	4286	0.0002	0.0001	0.0012	0.0006	-0.0108	-0.0022	-0.0003	0.0006	0.0024	0.0138
ScanPos004	3122	0.0000	-0.0000	0.0012	0.0005	-0.0159	-0.0017	-0.0003	0.0004	0.0021	0.0057
ScanPos005	2834	0.0002	0.0001	0.0012	0.0006	-0.0134	-0.0014	-0.0002	0.0006	0.0026	0.0190
ScanPos006	1828	0.0002	0.0001	0.0013	0.0005	-0.0183	-0.0016	-0.0002	0.0005	0.0027	0.0119
ScanPos007	4190	-0.0002	-0.0001	0.0012	0.0006	-0.0163	-0.0024	-0.0005	0.0002	0.0017	0.0083
ScanPos008	2952	-0.0000	-0.0000	0.0010	0.0005	-0.0061	-0.0021	-0.0003	0.0003	0.0019	0.0139
ScanPos009	3424	-0.0002	-0.0001	0.0010	0.0005	-0.0095	-0.0021	-0.0005	0.0002	0.0015	0.0054
ScanPos010	2924	-0.0001	-0.0000	0.0011	0.0006	-0.0154	-0.0021	-0.0004	0.0004	0.0016	0.0129
ScanPos011	3322	-0.0002	-0.0001	0.0011	0.0005	-0.0113	-0.0024	-0.0005	0.0002	0.0015	0.0107
ScanPos012	2194	-0.0001	-0.0000	0.0011	0.0005	-0.0108	-0.0026	-0.0004	0.0003	0.0018	0.0057
ScanPos013	3342	0.0001	0.0000	0.0016	0.0007	-0.0194	-0.0024	-0.0004	0.0005	0.0028	0.0274
ScanPos014	2876	-0.0002	-0.0001	0.0013	0.0006	-0.0115	-0.0036	-0.0006	0.0003	0.0020	0.0089
ScanPos015	3584	0.0001	0.0000	0.0015	0.0006	-0.0110	-0.0021	-0.0004	0.0005	0.0030	0.0289
ScanPos016	2592	0.0000	0.0000	0.0012	0.0005	-0.0205	-0.0022	-0.0003	0.0004	0.0018	0.0114
ScanPos017	5382	0.0001	0.0001	0.0012	0.0006	-0.0100	-0.0019	-0.0003	0.0005	0.0024	0.0161
ScanPos018	3218	0.0002	0.0001	0.0011	0.0005	-0.0083	-0.0016	-0.0002	0.0005	0.0029	0.0096
ScanPos019	7134	0.0001	0.0000	0.0012	0.0006	-0.0088	-0.0019	-0.0004	0.0005	0.0027	0.0127
ScanPos020	4694	0.0002	0.0001	0.0016	0.0007	-0.0113	-0.0024	-0.0004	0.0006	0.0037	0.0212
ScanPos021	7708	0.0001	0.0001	0.0011	0.0006	-0.0118	-0.0016	-0.0003	0.0005	0.0023	0.0185
ScanPos022	5632	0.0002	0.0001	0.0015	0.0007	-0.0194	-0.0020	-0.0003	0.0007	0.0032	0.0249
ScanPos023	7896	0.0002	0.0001	0.0011	0.0006	-0.0172	-0.0018	-0.0002	0.0006	0.0026	0.0105
ScanPos024	6380	0.0002	0.0001	0.0012	0.0006	-0.0154	-0.0021	-0.0003	0.0006	0.0025	0.0153
ScanPos025	7256	-0.0001	-0.0001	0.0011	0.0006	-0.0082	-0.0023	-0.0006	0.0003	0.0019	0.0099
ScanPos026	5074	0.0000	0.0000	0.0012	0.0007	-0.0091	-0.0022	-0.0005	0.0004	0.0023	0.0207
ScanPos027	8448	-0.0002	-0.0001	0.0017	0.0007	-0.0249	-0.0030	-0.0007	0.0003	0.0025	0.0309
ScanPos028	6524	-0.0000	0.0000	0.0012	0.0006	-0.0121	-0.0025	-0.0004	0.0004	0.0024	0.0120
ScanPos029	7340	-0.0002	-0.0001	0.0012	0.0006	-0.0162	-0.0024	-0.0005	0.0003	0.0017	0.0136

		Plane Patch Residuals of Distance [m]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos030	5596	-0.0001	-0.0000	0.0012	0.0006	-0.0152	-0.0026	-0.0005	0.0004	0.0020	0.0114
ScanPos031	10162	-0.0002	-0.0001	0.0014	0.0007	-0.0218	-0.0030	-0.0007	0.0003	0.0019	0.0162
ScanPos032	8058	-0.0002	-0.0000	0.0014	0.0006	-0.0219	-0.0032	-0.0005	0.0003	0.0020	0.0100
ScanPos033	8886	-0.0002	-0.0001	0.0014	0.0007	-0.0315	-0.0030	-0.0006	0.0004	0.0021	0.0140
ScanPos034	5778	-0.0001	-0.0001	0.0012	0.0007	-0.0091	-0.0025	-0.0006	0.0004	0.0019	0.0140
ScanPos035	11218	-0.0002	-0.0001	0.0011	0.0006	-0.0124	-0.0026	-0.0006	0.0002	0.0017	0.0128
ScanPos036	8744	-0.0002	-0.0001	0.0011	0.0006	-0.0131	-0.0029	-0.0006	0.0002	0.0015	0.0083
ScanPos037	4026	-0.0000	-0.0000	0.0011	0.0006	-0.0073	-0.0021	-0.0005	0.0004	0.0022	0.0124
ScanPos038	2610	0.0000	-0.0000	0.0015	0.0006	-0.0061	-0.0024	-0.0004	0.0004	0.0024	0.0295
ScanPos039	6552	-0.0000	0.0000	0.0013	0.0007	-0.0161	-0.0023	-0.0005	0.0005	0.0022	0.0249
ScanPos040	4186	-0.0002	-0.0001	0.0012	0.0007	-0.0093	-0.0031	-0.0007	0.0003	0.0021	0.0099
ScanPos041	11774	-0.0001	-0.0000	0.0012	0.0006	-0.0151	-0.0025	-0.0005	0.0004	0.0019	0.0266
ScanPos042	9688	-0.0003	-0.0001	0.0012	0.0006	-0.0239	-0.0031	-0.0006	0.0003	0.0017	0.0066
ScanPos043	7858	-0.0002	-0.0001	0.0013	0.0006	-0.0142	-0.0026	-0.0006	0.0003	0.0018	0.0144
ScanPos044	6870	-0.0001	-0.0001	0.0015	0.0006	-0.0210	-0.0026	-0.0005	0.0004	0.0023	0.0236
ScanPos045	6304	0.0001	0.0000	0.0011	0.0006	-0.0144	-0.0019	-0.0004	0.0005	0.0024	0.0115
ScanPos046	4488	-0.0001	-0.0001	0.0012	0.0007	-0.0115	-0.0024	-0.0005	0.0003	0.0024	0.0092
ScanPos047	10282	-0.0001	-0.0000	0.0013	0.0007	-0.0195	-0.0024	-0.0005	0.0004	0.0022	0.0179
ScanPos048	8546	-0.0001	-0.0001	0.0015	0.0006	-0.0185	-0.0027	-0.0005	0.0003	0.0024	0.0286
ScanPos049	11570	-0.0001	-0.0000	0.0010	0.0006	-0.0201	-0.0020	-0.0004	0.0004	0.0018	0.0089
ScanPos050	8338	-0.0000	-0.0000	0.0010	0.0006	-0.0106	-0.0020	-0.0004	0.0004	0.0022	0.0098
ScanPos051	9620	-0.0001	-0.0001	0.0010	0.0006	-0.0227	-0.0021	-0.0005	0.0003	0.0017	0.0154
ScanPos052	6856	-0.0001	-0.0000	0.0010	0.0006	-0.0208	-0.0021	-0.0005	0.0004	0.0018	0.0051
ScanPos053	5896	0.0001	0.0001	0.0009	0.0006	-0.0106	-0.0017	-0.0003	0.0005	0.0020	0.0104
ScanPos054	4038	0.0001	0.0001	0.0012	0.0006	-0.0185	-0.0018	-0.0003	0.0005	0.0025	0.0196
ScanPos055	6408	0.0001	0.0001	0.0009	0.0006	-0.0077	-0.0018	-0.0003	0.0005	0.0020	0.0077
ScanPos056	4170	-0.0001	-0.0001	0.0011	0.0006	-0.0095	-0.0020	-0.0004	0.0003	0.0019	0.0254
ScanPos057	10424	-0.0001	-0.0000	0.0010	0.0006	-0.0097	-0.0023	-0.0005	0.0004	0.0018	0.0073
ScanPos058	8614	-0.0001	-0.0000	0.0012	0.0006	-0.0129	-0.0026	-0.0005	0.0004	0.0022	0.0171
ScanPos059	9296	0.0000	0.0000	0.0011	0.0007	-0.0085	-0.0023	-0.0004	0.0004	0.0023	0.0134
ScanPos060	7232	-0.0002	-0.0001	0.0011	0.0006	-0.0117	-0.0028	-0.0006	0.0003	0.0018	0.0138
ScanPos061	7350	0.0001	0.0001	0.0010	0.0006	-0.0116	-0.0018	-0.0003	0.0005	0.0021	0.0099
ScanPos062	5628	-0.0001	-0.0001	0.0013	0.0007	-0.0115	-0.0025	-0.0005	0.0004	0.0025	0.0215
ScanPos063	9252	-0.0001	-0.0000	0.0011	0.0006	-0.0143	-0.0022	-0.0005	0.0004	0.0019	0.0118
ScanPos064	6258	-0.0002	-0.0001	0.0012	0.0007	-0.0110	-0.0028	-0.0007	0.0003	0.0021	0.0081
ScanPos065	9394	0.0000	0.0000	0.0012	0.0006	-0.0329	-0.0020	-0.0004	0.0005	0.0023	0.0115
ScanPos066	7258	-0.0002	-0.0001	0.0011	0.0006	-0.0126	-0.0025	-0.0006	0.0002	0.0020	0.0147
ScanPos067	9704	0.0001	0.0001	0.0013	0.0007	-0.0184	-0.0023	-0.0004	0.0005	0.0025	0.0184
ScanPos068	7326	-0.0001	-0.0000	0.0013	0.0007	-0.0167	-0.0029	-0.0006	0.0004	0.0022	0.0117
ScanPos069	11872	0.0001	0.0000	0.0011	0.0006	-0.0144	-0.0020	-0.0004	0.0005	0.0023	0.0167

		Plane Patch Residuals of Distance [m]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos070	9704	0.0001	0.0001	0.0013	0.0007	-0.0164	-0.0025	-0.0004	0.0005	0.0026	0.0181
ScanPos071	11240	0.0001	0.0001	0.0013	0.0007	-0.0245	-0.0021	-0.0004	0.0005	0.0024	0.0285
ScanPos072	5064	-0.0001	-0.0000	0.0018	0.0008	-0.0181	-0.0035	-0.0006	0.0005	0.0027	0.0149
ScanPos073	8726	0.0001	0.0001	0.0019	0.0008	-0.0287	-0.0027	-0.0005	0.0007	0.0033	0.0421
ScanPos074	6884	0.0000	-0.0000	0.0024	0.0010	-0.0228	-0.0034	-0.0007	0.0006	0.0040	0.0497
ScanPos075	6354	0.0004	0.0002	0.0016	0.0008	-0.0107	-0.0022	-0.0002	0.0009	0.0034	0.0266
ScanPos076	4906	-0.0001	-0.0000	0.0014	0.0006	-0.0178	-0.0024	-0.0005	0.0004	0.0023	0.0376
ScanPos077	8474	0.0001	0.0000	0.0012	0.0007	-0.0119	-0.0022	-0.0004	0.0005	0.0023	0.0169
ScanPos078	5270	-0.0000	-0.0001	0.0016	0.0008	-0.0313	-0.0025	-0.0006	0.0005	0.0029	0.0191
ScanPos079	8474	-0.0001	-0.0001	0.0013	0.0007	-0.0157	-0.0026	-0.0006	0.0003	0.0022	0.0149
ScanPos080	5746	-0.0000	0.0000	0.0014	0.0007	-0.0121	-0.0026	-0.0005	0.0005	0.0024	0.0244
ScanPos081	8040	0.0000	0.0000	0.0011	0.0006	-0.0248	-0.0020	-0.0004	0.0005	0.0022	0.0091
ScanPos082	5408	-0.0001	-0.0001	0.0012	0.0007	-0.0113	-0.0023	-0.0005	0.0004	0.0021	0.0155
ScanPos083	7934	-0.0000	-0.0000	0.0012	0.0006	-0.0208	-0.0022	-0.0004	0.0004	0.0021	0.0090
ScanPos084	5846	-0.0001	-0.0001	0.0014	0.0007	-0.0211	-0.0027	-0.0005	0.0004	0.0023	0.0117
ScanPos085	6350	0.0000	0.0000	0.0011	0.0006	-0.0160	-0.0017	-0.0004	0.0004	0.0020	0.0076
ScanPos086	5180	-0.0000	-0.0000	0.0011	0.0006	-0.0140	-0.0021	-0.0004	0.0004	0.0021	0.0097
ScanPos087	6928	-0.0000	-0.0000	0.0011	0.0006	-0.0240	-0.0019	-0.0004	0.0004	0.0019	0.0106
ScanPos088	5296	-0.0000	-0.0000	0.0010	0.0006	-0.0158	-0.0020	-0.0005	0.0004	0.0022	0.0064
ScanPos089	9530	0.0000	0.0000	0.0011	0.0006	-0.0112	-0.0020	-0.0003	0.0004	0.0021	0.0230
ScanPos090	7668	-0.0001	-0.0000	0.0011	0.0006	-0.0112	-0.0024	-0.0005	0.0003	0.0020	0.0064
ScanPos091	8010	0.0001	0.0000	0.0011	0.0006	-0.0121	-0.0020	-0.0004	0.0005	0.0021	0.0310
ScanPos092	5662	0.0000	0.0000	0.0013	0.0007	-0.0231	-0.0023	-0.0004	0.0005	0.0023	0.0127
ScanPos093	7224	0.0000	0.0000	0.0010	0.0006	-0.0242	-0.0018	-0.0004	0.0004	0.0020	0.0071
ScanPos094	4934	-0.0002	-0.0001	0.0010	0.0006	-0.0070	-0.0028	-0.0006	0.0002	0.0016	0.0084
ScanPos095	4366	0.0000	0.0000	0.0010	0.0005	-0.0136	-0.0017	-0.0003	0.0004	0.0017	0.0119
ScanPos096	3126	0.0000	0.0000	0.0009	0.0005	-0.0051	-0.0018	-0.0003	0.0004	0.0020	0.0091
ScanPos097	3758	-0.0000	-0.0000	0.0008	0.0005	-0.0046	-0.0018	-0.0004	0.0003	0.0015	0.0050
ScanPos098	2850	-0.0001	-0.0001	0.0009	0.0005	-0.0076	-0.0022	-0.0004	0.0003	0.0016	0.0059
ScanPos099	3986	0.0001	0.0001	0.0009	0.0005	-0.0038	-0.0016	-0.0003	0.0005	0.0021	0.0123
ScanPos100	2918	-0.0001	-0.0001	0.0009	0.0005	-0.0101	-0.0019	-0.0004	0.0003	0.0015	0.0050
ScanPos101	3050	0.0000	0.0000	0.0009	0.0005	-0.0080	-0.0015	-0.0003	0.0004	0.0018	0.0134
ScanPos102	2216	-0.0001	-0.0001	0.0010	0.0005	-0.0097	-0.0018	-0.0004	0.0003	0.0019	0.0132
ScanPos103	3582	0.0001	0.0001	0.0010	0.0006	-0.0060	-0.0018	-0.0003	0.0005	0.0020	0.0148
ScanPos104	2466	0.0001	0.0000	0.0010	0.0005	-0.0110	-0.0018	-0.0003	0.0004	0.0024	0.0077
ScanPos105	4620	0.0002	0.0001	0.0012	0.0007	-0.0099	-0.0017	-0.0003	0.0006	0.0025	0.0160
ScanPos106	3596	0.0001	0.0001	0.0010	0.0005	-0.0126	-0.0017	-0.0003	0.0005	0.0019	0.0099
ScanPos107	6390	0.0000	-0.0000	0.0009	0.0006	-0.0072	-0.0019	-0.0004	0.0004	0.0020	0.0058
ScanPos108	4414	-0.0000	-0.0000	0.0008	0.0005	-0.0117	-0.0017	-0.0003	0.0003	0.0014	0.0100
ScanPos109	8364	0.0001	0.0001	0.0012	0.0006	-0.0180	-0.0020	-0.0003	0.0005	0.0023	0.0101

		Plane Patch Residuals of Distance [m]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos110	3362	-0.0004	-0.0001	0.0023	0.0010	-0.0198	-0.0058	-0.0008	0.0004	0.0030	0.0263
		Plane Patch Angular Residuals [deg]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos001	4048	0.3526	0.2944	0.2825	0.3370	0.0010	0.0074	0.0941	0.5789	0.9178	1.5155
ScanPos002	3204	0.3611	0.3072	0.2751	0.3257	0.0011	0.0110	0.1185	0.5828	0.9107	1.3280
ScanPos003	4286	0.3832	0.3409	0.2823	0.3461	0.0006	0.0139	0.1274	0.6095	0.9348	1.6172
ScanPos004	3122	0.3666	0.3175	0.2740	0.3185	0.0013	0.0140	0.1262	0.5800	0.9275	1.2473
ScanPos005	2834	0.3711	0.3248	0.2801	0.3418	0.0006	0.0101	0.1140	0.5848	0.9345	1.5368
ScanPos006	1828	0.3525	0.2827	0.2814	0.3073	0.0012	0.0085	0.1046	0.5631	0.9157	1.4608
ScanPos007	4190	0.3641	0.3095	0.2793	0.3282	0.0007	0.0085	0.1113	0.5772	0.9211	1.2575
ScanPos008	2952	0.3480	0.2845	0.2726	0.3061	0.0010	0.0072	0.1036	0.5542	0.9061	1.2336
ScanPos009	3424	0.3666	0.3125	0.2787	0.3283	0.0009	0.0116	0.1176	0.5865	0.9215	1.3129
ScanPos010	2924	0.3692	0.3085	0.2779	0.3121	0.0007	0.0129	0.1292	0.5899	0.9302	1.5384
ScanPos011	3322	0.3389	0.2605	0.2836	0.3076	0.0003	0.0074	0.0863	0.5565	0.9284	1.8064
ScanPos012	2194	0.3475	0.2934	0.2666	0.3100	0.0012	0.0099	0.1087	0.5527	0.8844	1.1901
ScanPos013	3342	0.3636	0.3093	0.2783	0.3295	0.0004	0.0074	0.1094	0.5784	0.9310	1.5741
ScanPos014	2876	0.3535	0.2772	0.2806	0.3046	0.0002	0.0098	0.1059	0.5884	0.9288	1.2752
ScanPos015	3584	0.3701	0.3014	0.2876	0.3234	0.0007	0.0116	0.1138	0.5957	0.9343	1.3586
ScanPos016	2592	0.3309	0.2676	0.2676	0.2891	0.0005	0.0110	0.0939	0.5261	0.9040	1.3101
ScanPos017	5382	0.3859	0.3470	0.2876	0.3616	0.0001	0.0109	0.1209	0.6151	0.9302	1.6073
ScanPos018	3218	0.3331	0.2722	0.2674	0.2918	0.0006	0.0094	0.0996	0.5232	0.9066	1.2255
ScanPos019	7134	0.3844	0.3356	0.2815	0.3391	0.0002	0.0137	0.1298	0.6027	0.9291	1.4500
ScanPos020	4694	0.3678	0.3171	0.2719	0.3152	0.0008	0.0152	0.1243	0.5837	0.9081	1.4301
ScanPos021	7708	0.3763	0.3300	0.2744	0.3203	0.0023	0.0167	0.1317	0.5854	0.9277	1.6149
ScanPos022	5632	0.3728	0.3224	0.2750	0.3209	0.0006	0.0172	0.1291	0.5829	0.9228	1.3745
ScanPos023	7896	0.3791	0.3326	0.2808	0.3402	0.0008	0.0166	0.1247	0.5999	0.9324	1.4227
ScanPos024	6380	0.3717	0.3247	0.2718	0.3161	0.0007	0.0169	0.1309	0.5760	0.9211	1.7045
ScanPos025	7256	0.3828	0.3340	0.2857	0.3446	0.0004	0.0129	0.1294	0.6112	0.9390	1.6495
ScanPos026	5074	0.3918	0.3535	0.2825	0.3439	0.0005	0.0149	0.1407	0.6166	0.9417	1.5190
ScanPos027	8448	0.3778	0.3336	0.2854	0.3447	0.0009	0.0103	0.1201	0.6009	0.9369	1.8507
ScanPos028	6524	0.3562	0.2961	0.2800	0.3141	0.0003	0.0084	0.1113	0.5673	0.9179	1.5439
ScanPos029	7340	0.3725	0.3201	0.2838	0.3359	0.0004	0.0120	0.1164	0.5888	0.9335	1.7324
ScanPos030	5596	0.3988	0.3586	0.2842	0.3425	0.0006	0.0152	0.1447	0.6224	0.9544	1.4251
ScanPos031	10162	0.3645	0.3063	0.2883	0.3347	0.0002	0.0101	0.1066	0.5908	0.9360	1.9005
ScanPos032	8058	0.3736	0.3159	0.2846	0.3327	0.0003	0.0092	0.1219	0.5994	0.9354	1.6134
ScanPos033	8886	0.3815	0.3343	0.2864	0.3457	0.0005	0.0096	0.1239	0.6051	0.9421	1.9721
ScanPos034	5778	0.3779	0.3255	0.2849	0.3406	0.0009	0.0114	0.1238	0.6112	0.9332	1.4915
ScanPos035	11218	0.3853	0.3380	0.2887	0.3468	0.0004	0.0115	0.1225	0.6120	0.9507	1.7245
ScanPos036	8744	0.3665	0.3042	0.2833	0.3201	0.0002	0.0100	0.1166	0.5868	0.9393	1.8586
ScanPos037	4026	0.3760	0.3100	0.2979	0.3537	0.0004	0.0059	0.1014	0.6337	0.9452	1.4358

		Plane Patch Angular Residuals [deg]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos038	2610	0.3702	0.3176	0.2809	0.3312	0.0003	0.0124	0.1223	0.5942	0.9265	1.6782
ScanPos039	6552	0.3959	0.3581	0.2905	0.3635	0.0003	0.0101	0.1308	0.6297	0.9503	1.5064
ScanPos040	4186	0.3587	0.2896	0.2909	0.3281	0.0003	0.0074	0.1003	0.5839	0.9428	1.5179
ScanPos041	11774	0.3802	0.3296	0.2859	0.3424	0.0001	0.0100	0.1230	0.6066	0.9423	1.6066
ScanPos042	9688	0.3615	0.3044	0.2844	0.3236	0.0004	0.0085	0.1105	0.5763	0.9308	1.6822
ScanPos043	7858	0.3670	0.3068	0.2910	0.3436	0.0003	0.0061	0.1048	0.5963	0.9454	1.5637
ScanPos044	6870	0.3775	0.3302	0.2839	0.3391	0.0005	0.0079	0.1236	0.6045	0.9371	1.5492
ScanPos045	6304	0.3796	0.3286	0.2875	0.3490	0.0001	0.0097	0.1202	0.6136	0.9398	1.4323
ScanPos046	4488	0.3701	0.3182	0.2726	0.3127	0.0007	0.0122	0.1325	0.5828	0.9254	1.3230
ScanPos047	10282	0.3873	0.3400	0.2876	0.3441	0.0008	0.0133	0.1268	0.6116	0.9448	1.6812
ScanPos048	8546	0.3923	0.3473	0.2873	0.3490	0.0002	0.0116	0.1352	0.6234	0.9389	2.1999
ScanPos049	11570	0.3730	0.3219	0.2799	0.3235	0.0003	0.0134	0.1265	0.5867	0.9242	2.8025
ScanPos050	8338	0.3805	0.3289	0.2790	0.3216	0.0006	0.0121	0.1356	0.5915	0.9362	1.5466
ScanPos051	9620	0.3902	0.3458	0.2813	0.3409	0.0005	0.0149	0.1374	0.6119	0.9353	1.5158
ScanPos052	6856	0.3836	0.3397	0.2758	0.3230	0.0003	0.0135	0.1439	0.5913	0.9307	1.6207
ScanPos053	5896	0.3945	0.3502	0.2831	0.3420	0.0001	0.0135	0.1440	0.6196	0.9382	1.6152
ScanPos054	4038	0.3797	0.3317	0.2784	0.3122	0.0006	0.0140	0.1357	0.5720	0.9207	1.5827
ScanPos055	6408	0.3649	0.3089	0.2841	0.3345	0.0004	0.0104	0.1059	0.5907	0.9362	1.4458
ScanPos056	4170	0.3458	0.2824	0.2763	0.3076	0.0004	0.0103	0.1029	0.5518	0.9250	1.3053
ScanPos057	10424	0.3805	0.3246	0.2900	0.3355	0.0004	0.0115	0.1272	0.6024	0.9435	4.3218
ScanPos058	8614	0.3802	0.3377	0.2739	0.3206	0.0007	0.0137	0.1413	0.5869	0.9264	1.6780
ScanPos059	9296	0.3823	0.3383	0.2857	0.3467	0.0003	0.0140	0.1236	0.6071	0.9367	1.7078
ScanPos060	7232	0.3871	0.3441	0.2775	0.3375	0.0004	0.0138	0.1381	0.6103	0.9343	1.9299
ScanPos061	7350	0.3918	0.3402	0.2904	0.3523	0.0005	0.0128	0.1314	0.6273	0.9379	1.6684
ScanPos062	5628	0.3868	0.3380	0.2813	0.3311	0.0012	0.0144	0.1360	0.6045	0.9414	1.3230
ScanPos063	9252	0.3919	0.3557	0.2826	0.3494	0.0008	0.0138	0.1360	0.6158	0.9350	1.5239
ScanPos064	6258	0.3948	0.3558	0.2805	0.3461	0.0004	0.0141	0.1383	0.6139	0.9415	1.2776
ScanPos065	9394	0.3672	0.3167	0.2821	0.3395	0.0008	0.0111	0.1118	0.5890	0.9301	1.4522
ScanPos066	7258	0.3491	0.2904	0.2715	0.3027	0.0006	0.0122	0.1117	0.5519	0.9104	1.7013
ScanPos067	9704	0.3753	0.3147	0.2890	0.3381	0.0002	0.0100	0.1174	0.6044	0.9507	1.5549
ScanPos068	7326	0.3757	0.3216	0.2834	0.3273	0.0001	0.0112	0.1258	0.5936	0.9359	1.6423
ScanPos069	11872	0.3644	0.3065	0.2800	0.3283	0.0003	0.0110	0.1128	0.5816	0.9260	1.4555
ScanPos070	9704	0.3706	0.3163	0.2871	0.3301	0.0001	0.0085	0.1190	0.5894	0.9324	4.0787
ScanPos071	11240	0.3787	0.3275	0.2862	0.3419	0.0004	0.0116	0.1201	0.6055	0.9390	2.2647
ScanPos072	5064	0.3608	0.2982	0.2808	0.3193	0.0004	0.0091	0.1105	0.5799	0.9260	1.5483
ScanPos073	8726	0.3799	0.3299	0.3001	0.3680	0.0003	0.0068	0.1008	0.6177	0.9503	1.8810
ScanPos074	6884	0.4044	0.3671	0.2983	0.3723	0.0002	0.0095	0.1342	0.6431	0.9621	1.7770
ScanPos075	6354	0.3699	0.3149	0.2916	0.3519	0.0002	0.0073	0.1036	0.6019	0.9364	2.0128
ScanPos076	4906	0.3239	0.2457	0.2771	0.2924	0.0009	0.0058	0.0783	0.5420	0.8900	1.5215
ScanPos077	8474	0.3649	0.2998	0.2904	0.3341	0.0002	0.0082	0.1027	0.5906	0.9321	1.6205

		Plane Patch Angular Residuals [deg]									
Name	# plane patches	mean	median	std. dev.	std(mad)	min	q2.5%	q25%	q75%	q97.5%	max
ScanPos078	5270	0.3859	0.3423	0.2843	0.3467	0.0005	0.0119	0.1295	0.6060	0.9373	2.0403
ScanPos079	8474	0.3688	0.3150	0.2850	0.3384	0.0004	0.0100	0.1114	0.5961	0.9245	1.8015
ScanPos080	5746	0.3671	0.3273	0.2795	0.3321	0.0003	0.0100	0.1175	0.5716	0.9329	1.7450
ScanPos081	8040	0.3610	0.3042	0.2873	0.3366	0.0001	0.0070	0.1010	0.5856	0.9336	1.5565
ScanPos082	5408	0.3603	0.3100	0.2766	0.3238	0.0002	0.0078	0.1159	0.5676	0.9102	1.6837
ScanPos083	7934	0.3656	0.3157	0.2808	0.3304	0.0002	0.0093	0.1139	0.5849	0.9255	1.6489
ScanPos084	5846	0.3769	0.3239	0.2826	0.3364	0.0001	0.0111	0.1258	0.5994	0.9297	1.5070
ScanPos085	6350	0.3592	0.2983	0.2798	0.3198	0.0005	0.0104	0.1101	0.5756	0.9252	1.4617
ScanPos086	5180	0.3446	0.2841	0.2737	0.3091	0.0001	0.0073	0.1002	0.5435	0.9101	1.5488
ScanPos087	6928	0.3451	0.2789	0.2794	0.3114	0.0001	0.0091	0.0956	0.5553	0.9306	1.4879
ScanPos088	5296	0.3679	0.3144	0.2793	0.3275	0.0009	0.0116	0.1212	0.5879	0.9277	1.5295
ScanPos089	9530	0.3694	0.3134	0.2866	0.3321	0.0003	0.0105	0.1155	0.5902	0.9411	1.5503
ScanPos090	7668	0.3775	0.3244	0.2829	0.3363	0.0004	0.0108	0.1247	0.6006	0.9364	1.4396
ScanPos091	8010	0.3848	0.3425	0.2869	0.3573	0.0007	0.0119	0.1200	0.6147	0.9371	1.5792
ScanPos092	5662	0.3832	0.3403	0.2811	0.3441	0.0002	0.0120	0.1301	0.6114	0.9226	1.6773
ScanPos093	7224	0.3696	0.3214	0.2773	0.3302	0.0007	0.0113	0.1215	0.5858	0.9167	1.5498
ScanPos094	4934	0.3547	0.2918	0.2809	0.3188	0.0007	0.0109	0.1035	0.5739	0.9235	1.3945
ScanPos095	4366	0.3603	0.2999	0.2856	0.3260	0.0005	0.0081	0.1023	0.5758	0.9269	1.7123
ScanPos096	3126	0.3662	0.3105	0.2789	0.3241	0.0004	0.0112	0.1156	0.5811	0.9276	1.3732
ScanPos097	3758	0.3496	0.2811	0.2793	0.3151	0.0002	0.0092	0.1033	0.5606	0.9140	1.2320
ScanPos098	2850	0.3497	0.2814	0.2753	0.2932	0.0005	0.0110	0.1118	0.5412	0.9259	1.6276
ScanPos099	3986	0.3651	0.2992	0.2853	0.3291	0.0005	0.0111	0.1050	0.5995	0.9232	1.4601
ScanPos100	2918	0.3610	0.2910	0.2798	0.3128	0.0001	0.0119	0.1137	0.5758	0.9225	1.5962
ScanPos101	3050	0.3539	0.2927	0.2706	0.3074	0.0013	0.0144	0.1149	0.5703	0.9081	1.5589
ScanPos102	2216	0.3585	0.3168	0.2671	0.3137	0.0021	0.0152	0.1227	0.5633	0.9130	1.7099
ScanPos103	3582	0.3608	0.3024	0.2830	0.3247	0.0010	0.0130	0.1066	0.5725	0.9245	1.5142
ScanPos104	2466	0.3426	0.2709	0.2752	0.2941	0.0021	0.0129	0.1004	0.5434	0.9140	1.4287
ScanPos105	4620	0.3730	0.3203	0.2835	0.3452	0.0007	0.0123	0.1164	0.6007	0.9282	1.5578
ScanPos106	3596	0.3812	0.3207	0.2828	0.3254	0.0004	0.0134	0.1311	0.5964	0.9415	1.4334
ScanPos107	6390	0.3727	0.3161	0.2820	0.3239	0.0004	0.0122	0.1229	0.5846	0.9336	1.5362
ScanPos108	4414	0.3528	0.2879	0.2723	0.3026	0.0006	0.0091	0.1137	0.5584	0.9148	1.3545
ScanPos109	8364	0.3905	0.3511	0.2805	0.3397	0.0003	0.0141	0.1402	0.6066	0.9285	1.5344
ScanPos110	3362	0.3829	0.3397	0.2802	0.3363	0.0004	0.0126	0.1336	0.6070	0.9291	1.6314