

Bildflug Bodenordnungsverfahren Rehberg

Bildflug 8cm GSD / 07.02.2007 Protokoll Aerotriangulation (Auszug)

Start Post Processing: Fri Apr 20 14:20:02 2007

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Block	: complete Block
Number of photos	: 186
Number of strips	: 10
Photo scale	: 1:9284
Mean terrain height [m]	: 50

Control parameter for block adjustment :

Selfcalibration	: OFF
GPS-Mode	: ON
Drift-Mode	: ON
drift per strip	: ON
drift for X,Y,Z	: ON,ON,ON
enable shifts only	: ON
INS-Mode	: ON
INS-Boresight	: ON
Earth's curvature correction	: ON
Atmospheric correction	: ON
Do not eliminate manual points	: OFF

Standard deviations (a-priori) :

Ground control (planimetry) [m]

Set	
0 (=default)	: 0.050

Ground control (height) [m]

Set	
0 (=default)	: 0.080

Automatic image points [mm]

Set	
0 (=default)	: 0.002

Image points of ground control and manual measurements [mm]	: 0.003
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GPS	X Y Z [m]	: 0.100 0.100 0.100
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INS	omega phi kappa [deg]	: 0.010 0.010 0.010
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//Anzahl der Mehrfachverknüpfungen//

found	3453 points connecting	2 photos
found	2066 points connecting	3 photos
found	1851 points connecting	4 photos
found	771 points connecting	5 photos
found	1312 points connecting	6 photos

number of observations	65636
number of unknowns	29538
redundancy	36098

RMS automatic points in photo

x 0.9 micron
y 1.1 micron

RMS control points in photo

x 5.4 micron
y 3.7 micron

RMS manual photo measurements with default standard deviation set (mittlerer Fehler der Passpunkte)

x 0.050 [meter]
y 0.094 [meter]
z 0.069 [meter]

RMS INS observations (mittlerer Fehler der INS-Beobachtungen)

omega 0.014 [deg]
phi 0.009 [deg]
kappa 0.056 [deg]

RMS GPS observations (mittlerer Fehler der GPS-Beobachtungen)

x 0.121 [meter]
y 0.108 [meter]
z 0.062 [meter]

residuals horizontal control points in [meter]

control point ID	rx	ry
1	0.016	0.098
2	0.014	-0.210
3	-0.040	-0.104
4	-0.052	0.134
5	0.089	-0.057
6	-0.019	0.100
7	-0.083	-0.106
9	0.028	-0.027
10	0.040	0.025
1_1	0.011	-0.011
1_2	0.056	-0.032
3_1	0.041	-0.095
4_1	-0.072	0.083
5_1	-0.014	0.049
6_1	-0.071	0.110
9_1	0.055	0.043

residuals vertical control points in [meter]

control point ID	rz
1	0.053
2	-0.006
3	-0.056
4	-0.025
5	0.021
7	-0.009
8	-0.052
9	0.064
10	0.078
11	-0.073
1_1	0.073
1_2	0.017
2_1	0.084
3_1	-0.070
4_1	-0.057
5_1	0.101
6_1	-0.167
9_1	0.023

//errechnete Boresight-Winkel//

determined boresight angles INS in [deg]: omega -0.1986 phi +0.0046 kappa -0.1136

Note: When boresight corrections is done during import EO in project editor

for not triangulated photos, use these values with reverse sign!

angles of transposed Matrix : +0.1986 -0.0042 +0.1136

//Ausgeglichene Koordinaten der Projektionszentren//

exterior orientation parameters (px, py, pz in [meter] omega,phi,kappa in [deg])

rotations from terrain to photo (rotated axes)

photo ID	px	py	pz	omega	phi	kappa
0004_010_014	4597978.385	5926937.146		986.391	-0.0483	-0.0055 -173.4286
0005_010_013	4597735.042	5926932.595		984.885	0.1481	0.0527 -173.1901
0006_010_012	4597497.607	5926921.033		983.085	-0.3018	-0.0080 -176.1623
0007_010_011	4597253.206	5926906.458		982.850	-0.1400	-0.0072 -176.4932
0008_010_010	4597010.057	5926893.883		986.626	0.0328	0.1142 -176.6464
0009_010_009	4596775.162	5926884.275		990.955	-0.1153	-0.0631 -177.0190
0010_010_008	4596529.854	5926875.105		991.754	-0.0907	-0.0316 -177.4121
0011_010_007	4596290.326	5926865.688		990.810	-0.0295	0.0489 -177.4523
0012_010_006	4596051.134	5926853.713		990.806	-0.0310	0.1413 -176.6431
0013_009_005	4595834.067	5926203.235		989.088	0.2992	0.0132 4.3651
0014_009_006	4596074.173	5926213.832		989.824	0.0330	0.0283 4.4147
0015_009_007	4596311.501	5926225.028		989.987	0.1328	0.0274 4.4811
0016_009_008	4596553.229	5926237.290		990.195	0.1178	0.0085 4.5395
0017_009_009	4596790.361	5926249.030		990.018	0.2553	0.0092 4.5641
0018_009_010	4597035.349	5926259.267		988.974	0.0728	-0.0141 2.9543
0019_009_011	4597272.930	5926267.995		988.629	0.1565	-0.0984 3.0478
0020_009_012	4597515.224	5926277.402		990.441	0.1047	-0.0287 3.1211
0021_009_013	4597751.935	5926288.061		992.528	0.0917	-0.0249 3.2736
0022_009_014	4597991.821	5926301.709		994.977	0.4626	0.0278 3.8063
0023_009_015	4598232.886	5926313.792		996.463	0.1343	-0.0316 3.6630
0024_009_016	4598473.277	5926322.688		997.037	0.0231	0.0221 3.4284
0025_009_017	4598713.988	5926329.349		995.213	0.0689	-0.0012 3.2168
0026_009_018	4598956.959	5926336.438		992.327	0.0671	-0.0423 3.0223
0027_008_021	4599699.479	5925708.658		992.821	-0.3499	-0.0110 -175.7106
0028_008_020	4599463.697	5925693.677		991.665	-0.2492	-0.0078 -176.0622
0029_008_019	4599220.832	5925685.539		990.043	-0.0483	0.0369 -176.5575
0030_008_018	4598983.907	5925681.789		990.083	-0.0514	0.1483 -177.0088
0031_008_017	4598742.317	5925680.455		993.592	0.1417	-0.0111 -177.4394
0032_008_016	4598502.977	5925674.037		995.577	-0.3690	-0.0513 -177.8700
0033_008_015	4598263.557	5925664.218		993.353	-0.2672	-0.0171 -177.7292
0034_008_014	4598020.651	5925653.862		989.723	-0.0212	0.0528 -177.3990
0035_008_013	4597782.271	5925640.932		987.007	-0.1053	0.0680 -176.7406
0036_008_012	4597544.548	5925625.009		986.586	-0.2936	0.1009 -175.8105
0037_008_011	4597301.821	5925607.489		990.060	-0.2519	-0.0278 -175.9100
0038_008_010	4597062.392	5925595.204		992.433	-0.0724	-0.0252 -176.1055
0039_008_009	4596821.898	5925588.152		992.992	-0.1123	0.0187 -176.2757
0040_008_008	4596586.785	5925583.119		993.156	-0.0423	0.0223 -176.4062
0041_008_007	4596346.401	5925576.102		993.417	-0.2356	-0.0010 -176.5446
0042_008_006	4596105.361	5925565.394		992.911	-0.1046	-0.0122 -176.6533
0043_008_005	4595862.986	5925550.014		991.344	-0.2315	0.0193 -176.1842
0044_008_004	4595627.751	5925534.360		990.168	-0.3933	0.0134 -176.1840
0045_007_002	4595171.283	5924893.997		992.341	0.1210	0.0238 3.9455
0046_007_003	4595409.966	5924902.568		993.669	0.0812	0.0216 3.6537
0047_007_004	4595647.709	5924913.075		994.390	0.2362	0.0611 3.3569
0048_007_005	4595886.364	5924924.297		993.724	0.2006	-0.0332 3.0391
0049_007_006	4596130.459	5924934.061		992.817	0.2698	0.0278 2.3131
0050_007_007	4596369.864	5924940.514		991.888	0.1311	-0.0004 2.0259
0051_007_008	4596605.886	5924944.565		991.490	0.1260	-0.0424 1.7288
0052_007_009	4596848.104	5924948.945		991.725	0.1568	0.0116 1.4736
0053_007_010	4597090.110	5924955.214		991.655	0.2511	-0.0092 2.2824
0054_007_011	4597326.964	5924964.516		991.085	0.0162	-0.0018 2.8657
0055_007_012	4597565.311	5924976.957		990.263	0.1421	-0.0615 3.4826
0056_007_013	4597808.256	5924990.301		990.002	0.1532	-0.0304 3.3924
0057_007_014	4598045.415	5925002.340		990.475	0.2273	0.0047 3.1294
0058_007_015	4598289.880	5925012.137		990.589	0.1208	-0.0067 2.6181
0059_007_016	4598527.565	5925019.419		990.805	0.0641	-0.0030 2.1112
0060_007_017	4598765.335	5925027.677		990.993	0.0784	-0.0133 2.3271
0061_007_018	4599008.443	5925037.883		991.803	0.2036	0.0095 3.0597
0062_007_019	4599244.986	5925050.650		993.098	0.2648	0.0238 3.6449
0063_007_020	4599485.768	5925064.825		992.995	0.1265	-0.0438 3.6343
0064_007_021	4599728.130	5925078.505		993.764	0.1983	-0.0090 3.4614
0065_007_022	4599964.498	5925089.634		994.836	0.1013	0.0241 2.9666
0066_007_023	4600207.055	5925097.754		995.565	0.0642	-0.0059 2.4234
0067_007_024	4600447.740	5925104.542		995.697	0.0665	-0.0131 1.8984
0068_007_025	4600688.612	5925111.637		995.060	0.1519	-0.0388 2.0857
0069_006_021	4599758.561	5924420.015		987.160	-0.2276	0.0123 -177.8773

0070_006_020	4599517.802	5924411.551	987.284	-0.0960	0.0365	-177.9377
0071_006_019	4599274.365	5924402.303	987.977	-0.1513	0.0175	-177.6222
0072_006_018	4599035.516	5924392.000	987.768	-0.3460	-0.0195	-177.5184
0073_006_017	4598795.759	5924383.110	987.807	-0.0914	0.0410	-177.9361
0074_006_016	4598556.167	5924374.503	988.779	-0.0086	0.0748	-177.6994
0075_006_015	4598318.470	5924363.044	991.059	-0.1960	0.0236	-177.0251
0076_006_014	4598075.499	5924350.324	993.044	-0.1984	0.0660	-176.9969
0077_006_013	4597838.454	5924339.820	994.307	-0.0604	-0.0207	-177.4497
0078_006_012	4597600.730	5924331.990	992.372	-0.0045	0.0532	-178.1254
0079_006_011	4597355.068	5924324.534	990.246	-0.0367	0.0728	-178.1123
0080_006_010	4597115.058	5924315.268	990.939	-0.1443	0.0198	-177.3949
0081_006_009	4596878.228	5924303.059	992.654	-0.2523	0.0085	-176.7909
0082_006_008	4596635.371	5924288.843	994.031	-0.3925	-0.0508	-176.5484
0083_006_007	4596398.875	5924276.814	994.558	-0.0215	0.0288	-176.9850
0084_006_006	4596157.693	5924266.926	995.342	-0.1391	-0.0184	-177.4200
0085_006_005	4595920.188	5924257.758	995.374	-0.1348	0.0377	-177.7478
0086_006_004	4595677.277	5924248.356	996.017	-0.1436	0.0398	-177.6482
0087_006_003	4595441.052	5924237.795	997.492	-0.1396	0.0247	-177.1750
0088_006_002	4595201.385	5924225.390	998.385	-0.2286	-0.0214	-176.8231
0089_005_002	4595221.771	5923600.034	991.709	0.1143	-0.0422	4.0658
0090_005_003	4595465.326	5923610.887	992.615	0.1383	0.0348	3.9298
0091_005_004	4595701.820	5923620.146	993.909	0.2360	-0.0151	3.7978
0092_005_005	4595943.877	5923628.124	995.961	0.1245	0.0072	3.6490
0093_005_006	4596184.576	5923634.780	996.795	0.0558	0.1639	3.5162
0094_005_007	4596420.696	5923641.760	993.881	0.1390	0.0119	2.1520
0095_005_008	4596663.932	5923650.877	990.896	0.0273	-0.0475	2.8788
0096_005_009	4596904.239	5923663.438	989.999	0.1142	-0.0697	3.5410
0097_005_010	4597140.900	5923677.466	990.749	0.1147	0.0303	3.6481
0098_005_011	4597384.571	5923690.727	990.773	0.4057	0.0625	3.5150
0099_005_012	4597623.572	5923699.033	989.586	0.0855	-0.0137	3.1140
0100_005_013	4597862.093	5923702.259	988.970	-0.1309	-0.0151	2.7788
0101_005_014	4598099.669	5923707.686	987.981	0.2401	0.0506	2.4064
0102_005_015	4598343.834	5923715.513	986.460	0.0706	-0.0593	2.4931
0103_005_016	4598582.268	5923726.293	987.097	0.2384	0.0724	3.3108
0104_005_017	4598820.327	5923739.419	986.269	0.2576	-0.0068	3.4436
0105_005_018	4599060.995	5923751.913	985.502	0.1969	-0.0946	3.1402
0106_005_019	4599332.265	5923762.723	986.807	0.2101	-0.0242	2.6923
0107_005_020	4599540.166	5923771.305	987.639	0.1249	-0.0169	2.2543
0108_004_021	4599811.403	5923134.502	989.528	-0.2283	-0.0080	-177.1504
0109_004_020	4599572.713	5923125.750	987.747	-0.0545	0.0203	-177.7896
0110_004_019	4599332.203	5923116.592	987.544	-0.0087	0.0562	-177.4812
0111_004_018	4599092.674	5923103.608	988.732	-0.2951	-0.0198	-176.8061
0112_004_017	4598848.692	5923091.831	988.940	-0.2305	-0.0317	-177.3867
0113_004_016	4598608.635	5923084.434	987.144	0.0231	0.0019	-178.0279
0114_004_015	4598374.089	5923075.890	984.972	-0.2194	-0.0090	-177.6522
0115_004_014	4598134.391	5923065.628	984.800	-0.0501	0.0385	-177.5420
0116_004_013	4597891.095	5923053.980	986.629	-0.1236	0.0176	-177.0484
0117_004_012	4597650.633	5923040.963	987.813	-0.3641	-0.0274	-176.9038
0118_004_011	4597411.681	5923031.502	987.801	-0.1112	0.0285	-177.3480
0119_004_010	4597170.106	5923023.967	989.143	-0.1006	0.0380	-177.9776
0120_004_009	4596930.912	5923015.113	991.211	-0.1384	-0.0098	-177.5250
0121_004_008	4596695.142	5923003.625	992.853	-0.3782	0.0436	-177.2013
0122_004_007	4596452.614	5922994.100	994.755	-0.0918	0.0103	-177.5922
0123_004_006	4596211.030	5922987.214	995.984	-0.0500	-0.0213	-178.2624
0124_004_005	4595970.171	5922980.326	995.231	-0.1226	0.0554	-178.3262
0125_004_004	4595734.621	5922972.605	995.324	-0.2477	0.0213	-177.9895
0126_004_003	4595492.518	5922963.799	994.430	-0.2069	0.0057	-177.8593
0127_004_002	4595253.700	5922954.813	992.003	-0.3101	0.0433	-177.8500
0128_003_001	4595035.576	5922302.606	989.129	0.1782	0.0305	4.0284
0129_003_002	4595275.626	5922309.565	989.724	-0.0256	0.0355	3.7874
0130_003_003	4595516.864	5922316.648	988.615	0.0481	0.0180	3.5485
0131_003_004	4595757.711	5922328.737	986.992	0.3085	-0.0172	3.6535
0132_003_005	4595994.731	5922344.326	988.714	0.2800	0.0335	4.1474
0133_003_006	4596239.554	5922359.402	992.035	0.1946	-0.0076	3.9237
0134_003_007	4596477.936	5922369.566	993.800	0.0785	0.0538	3.6389
0135_003_008	4596717.326	5922377.382	993.137	0.0700	0.0069	3.3764
0136_003_009	4596959.077	5922384.491	992.031	0.1484	-0.0536	3.1233
0137_003_010	4597199.121	5922390.624	991.861	0.1365	-0.0237	2.8573
0138_003_011	4597439.183	5922394.906	992.142	0.0096	0.0254	2.6148
0139_003_012	4597678.104	5922400.888	992.744	0.1242	-0.0249	2.1632
0140_003_013	4597917.652	5922411.360	994.020	0.2481	0.0470	3.2518
0141_003_014	4598158.929	5922424.009	994.197	0.2508	0.0790	3.4052
0142_003_015	4598394.056	5922434.900	992.980	0.2592	0.0342	3.1231
0143_003_016	4598636.570	5922442.787	992.073	-0.0301	-0.0208	2.8845
0144_003_017	4598878.828	5922451.669	992.080	0.2015	-0.0089	2.6431
0145_003_018	4599113.915	5922461.907	992.428	0.3123	0.0356	2.7697
0146_003_019	4599356.800	5922471.908	991.694	0.2049	-0.0245	2.4676

0147_003_020	4599598.471	5922480.942	992.147	0.1060	-0.0021	2.4750
0148_003_021	4599835.226	5922491.162	992.167	0.1647	0.0107	2.6022
0149_002_021	4599865.920	5921852.441	983.888	-0.4624	-0.0377	-176.1204
0150_002_020	4599624.220	5921838.632	982.884	-0.0687	0.2012	-176.5447
0151_002_019	4599382.944	5921827.021	988.232	-0.1277	-0.0508	-177.0884
0152_002_018	4599145.790	5921815.763	993.180	-0.1385	-0.0405	-177.3540
0153_002_017	4598903.842	5921804.463	994.550	-0.1218	-0.0505	-177.2656
0154_002_016	4598667.770	5921791.941	993.980	-0.3819	-0.0440	-176.8542
0155_002_015	4598426.584	5921780.419	993.686	-0.0145	0.0245	-177.1867
0156_002_014	4598183.477	5921770.484	993.315	-0.0974	0.0586	-177.7450
0157_002_013	4597945.172	5921760.313	993.204	-0.3877	-0.0024	-177.6465
0158_002_012	4597706.661	5921752.592	993.449	-0.0696	0.0127	-178.2035
0159_002_011	4597468.639	5921745.964	993.710	-0.0813	0.0089	-178.4798
0160_002_010	4597223.725	5921737.683	994.287	-0.2070	-0.0455	-177.5463
0161_002_009	4596985.431	5921725.116	993.874	-0.3145	0.0011	-176.7742
0162_002_008	4596745.041	5921712.049	992.602	-0.2886	0.0250	-176.8443
0163_002_007	4596502.555	5921701.089	991.012	-0.1202	0.0130	-177.2911
0164_002_006	4596268.998	5921692.109	989.708	-0.2381	0.0414	-177.8318
0165_002_005	4596028.090	5921683.770	989.243	-0.1350	0.1805	-177.9879
0166_002_004	4595787.320	5921675.138	992.123	-0.2540	-0.0297	-178.0551
0167_002_003	4595548.005	5921668.055	993.790	-0.0656	-0.0063	-178.4914
0168_002_002	4595308.737	5921661.916	993.659	-0.1065	-0.0195	-178.4894
0169_002_001	4595069.115	5921654.284	992.077	-0.1080	0.0398	-177.9551
0193_001_001	4595081.157	5921007.473	991.880	0.1255	0.0375	3.3451
0194_001_002	4595323.045	5921020.473	992.286	0.1333	0.0368	3.4065
0195_001_003	4595566.603	5921033.198	991.865	0.0647	0.0012	3.1619
0196_001_004	4595804.193	5921044.071	991.887	0.0540	-0.0366	2.8624
0197_001_005	4596046.580	5921055.449	992.514	0.1184	0.0032	3.0069
0198_001_006	4596289.853	5921067.338	992.626	0.3384	0.0456	2.8955
0199_001_007	4596532.985	5921074.819	991.988	0.0476	-0.0261	2.2841
0200_001_008	4596769.590	5921078.950	992.314	-0.0990	-0.0230	1.8290
0201_001_009	4597012.442	5921085.939	994.661	0.2027	0.0031	2.3536
0202_001_010	4597252.552	5921095.929	996.891	0.0992	0.0523	2.4081
0203_001_011	4597492.481	5921104.115	999.100	0.0006	0.0397	2.3941
0204_001_012	4597729.385	5921114.229	1000.515	0.0566	0.2004	3.0913
0205_001_013	4597973.084	5921127.902	997.174	0.0856	0.0459	3.6923
0206_001_014	4598210.040	5921143.450	991.704	0.1535	0.0150	4.1661
0207_001_015	4598449.044	5921160.218	989.582	0.3069	0.0345	4.1866
0208_001_016	4598692.466	5921173.108	989.725	0.1757	0.0296	3.8537
0209_001_017	4598929.883	5921179.412	989.585	0.0564	0.0140	3.5206
0210_001_018	4599173.398	5921182.216	988.777	-0.0833	-0.0246	3.3007
0211_001_019	4599412.235	5921186.131	988.536	0.0323	-0.0486	3.1028
0212_001_020	4599652.160	5921193.945	989.088	0.1628	0.0249	2.8864

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Sigma naught : 1.6 [micron] = 0.2 [pixel in level 0]

Elapsed time = 0 hour 2 min. 8 sec.

End of Post Processing: Fri Apr 20 14:22:01 2007