

HELMERT MUUNNOS

4 PARAMETRINEN

Muunnosparametrien laskenta

lähtöjärjestelmä		tulojärjestelmä		Residuaalit		Koordinaattierot painopisteeseen				
ID	x	y	x'	y'	dx	dy	xi	yi	x'i	y'i
00G0034	6688804.412	3416730.702	6688672.654	27416561.844	0.011	0.018	-10132.288	-9631.294	-10132.309	-9631.138
00G0036	6687618.911	3442590.903	6687487.352	27442421.888	-0.022	-0.016	-11317.789	16228.907	-11317.611	16228.906
28M2904	6694623.781	3424311.898	6694492.041	27424142.953	-0.007	0.021	-4312.919	-2050.098	-4312.922	-2050.029
28M2911	6689498.719	3432908.991	6689367.053	27432740.021	-0.035	-0.005	-9437.981	6546.995	-9437.910	6547.039
29M2992	6702937.406	3422067.117	6702805.618	27421898.101	0.007	0.011	4000.706	-4294.879	4000.655	-4294.881
90M2611	6683486.329	3411135.401	6683354.476	27410966.608	-0.062	0.007	-15450.371	-15226.595	-15450.487	-15226.374
90M5326	6700611.525	3407137.324	6700479.573	27406968.418	-0.038	0.024	1674.825	-19224.672	1674.610	-19224.564
92M5549	6709376.199	3414649.690	6709244.284	27414480.685	-0.022	0.040	10439.499	-11712.306	10439.321	-11712.297
93M5522A	6701075.208	3435846.018	6700943.532	27435676.934	-0.011	-0.002	2138.508	9484.022	2138.569	9483.952
93M5546	6717228.064	3435374.275	6717096.309	27435205.048	-0.003	-0.007	18291.364	9012.279	18291.346	9012.066
96M9602D	6676334.022	3435098.889	6676202.444	27434930.002	-0.034	-0.026	-22602.678	8736.893	-22602.519	8737.020
					0.022	0.019	std			

Muunnoksen vastin pisteet on valittu siten, että ne kattavat koko porvoon kaupungin alueen tasaisena verkkona.

Muunnoksen painopisteeksi on annettu Porvoon kaupungin keskus pisteen 21001 koordinaatit.

Muunnos on laskettu KKJ -> ETRS-GK27 koordinaattijärjestelmien välille.

Muunnosparametrit	
x0	-127.193
y0	23999907.241
a	0.9999948474
b	-0.0000087477
scale factor	0.9999948474
rotation (deg)	-0.0005012074

Painopiste lähtöjärjestelmässä	
6698936.700	3426361.996

Painopiste tulosjärjestelmässä	
6698804.963	27426192.982

Muunnoskaavat:	
$x' = x0 + ax - by$	
$y' = y0 + bx + ay$	

Apusuureet	
I	2962736164
II	2962720898
III	-25917

TARKISTUS

Muunnosparametrien tarkistus kaikkiin Porvoon ylempään luokan Euref -pisteiden määrittelyyn v. 2006 osallistuneille pisteille

Muunnettavat pisteet				
ID	lähtöjärjestelmä		tulojärjestelmä	
	x	y	x'	y'
10	6698108.117	3427192.039	6697976.392	27427023.028
36	6700999.695	3428735.464	6700867.968	27428566.420
714	6701344.461	3425040.439	6701212.700	27424871.411
717	6696634.432	3428748.182	6696502.728	27428579.176
17_vara	6697953.182	3424737.628	6697821.436	27424568.631
35_vara	6710051.148	3434602.545	6709919.426	27434433.391
2061	6694629.164	3432708.409	6694497.505	27432539.400
2062	6704302.189	3432332.245	6704170.477	27432163.153
2063	6703726.833	3426905.879	6703595.076	27426736.820
21001	6698936.700	3426361.996	6698804.963	27426192.982
2295	6706859.622	3434182.768	6706727.913	27434013.644
513405	6709715.088	3420124.176	6709583.241	27419955.100
734304	6690857.594	3437025.852	6690725.992	27436856.854
873105	6707348.368	3427539.738	6707216.598	27427370.644
00G0034	6688804.412	3416730.702	6688672.643	27416561.826
00G0036	6687618.911	3442590.903	6687487.374	27442421.904
00M2002B	6703684.143	3413703.015	6703552.271	27413534.025
00M4907	6698877.491	3430521.552	6698745.791	27430352.517
28M2904	6694623.781	3424311.898	6694492.048	27424142.932
28M2910	6682004.117	3432846.034	6681872.524	27432677.135
28M2911	6689498.719	3432908.991	6689367.088	27432740.026
28M2915	6696642.252	3437339.203	6696510.623	27437170.153
29M2992	6702937.406	3422067.117	6702805.611	27421898.090
73M7111	6703292.011	3417507.115	6703160.174	27417338.109
90M0101	6677670.520	3423900.082	6677538.871	27423731.267
90M1005B	6686964.439	3423394.492	6686832.738	27423225.598
90M2611	6683486.329	3411135.401	6683354.538	27410966.601
90M2613	6689341.779	3410013.799	6689209.948	27409844.953
90M5317	6681004.794	3414483.846	6680873.045	27414315.050
90M5326	6700611.525	3407137.324	6700479.611	27406968.394
90M9002G	6695607.857	3419805.879	6695476.080	27419636.928
92M5537	6697092.045	3414247.801	6696960.212	27414078.866
92M5549	6709376.199	3414649.690	6709244.306	27414480.645
93M4323	6692350.903	3429819.320	6692219.230	27429650.346
93M5518B	6687847.750	3426560.285	6687716.072	27426391.367
93M5519B	6694748.614	3442624.672	6694617.041	27442455.611
93M5521A	6700688.086	3441024.426	6700556.468	27440855.321
93M5522A	6701075.208	3435846.018	6700943.543	27435676.936
93M5535A	6685114.773	3421643.257	6684983.066	27421474.388
93M5542A	6710518.862	3428312.372	6710387.082	27428143.247
93M5546	6717228.064	3435374.275	6717096.312	27435205.055
93M5551	6683602.294	3438545.311	6683470.743	27438376.368
96M9602D	6676334.022	3435098.889	6676202.478	27434930.028

Tunnetut arvot		
ID	x'	y'
10	6697976.388	27427023.033
36	6700867.976	27428566.410
714	6701212.704	27424871.393
717	6696502.735	27428579.172
17_vara	6697821.437	27424568.639
35_vara	6709919.416	27434433.390
2061	6694497.478	27432539.402
2062	6704170.468	27432163.151
2063	6703595.075	27426736.815
21001	6698804.963	27426192.982
2295	6706727.902	27434013.642
513405	6709583.232	27419955.114
734304	6690725.954	27436856.850
873105	6707216.591	27427370.642
00G0034	6688672.654	27416561.844
00G0036	6687487.352	27442421.888
00M2002B	6703552.246	27413534.060
00M4907	6698745.769	27430352.519
28M2904	6694492.041	27424142.953
28M2910	6681872.462	27432677.115
28M2911	6689367.053	27432740.021
28M2915	6696510.578	27437170.158
29M2992	6702805.618	27421898.101
73M7111	6703160.187	27417338.133
90M0101	6677538.852	27423731.222
90M1005B	6686832.725	27423225.598
90M2611	6683354.476	27410966.608
90M2613	6689209.893	27409844.966
90M5317	6680873.002	27414315.045
90M5326	6700479.573	27406968.418
90M9002G	6695476.056	27419636.959
92M5537	6696960.164	27414078.889
92M5549	6709244.284	27414480.685
93M4323	6692219.204	27429650.354
93M5518B	6687716.058	27426391.362
93M5519B	6694617.017	27442455.608
93M5521A	6700556.438	27440855.313
93M5522A	6700943.532	27435676.934
93M5535A	6684983.049	27421474.388
93M5542A	6710387.066	27428143.240
93M5546	6717096.309	27435205.048
93M5551	6683470.702	27438376.358
96M9602D	6676202.444	27434930.002

Residuaalit	
dx	dy
0.004	-0.005
-0.008	0.010
-0.004	0.018
-0.007	0.004
-0.001	-0.008
0.010	0.001
0.027	-0.002
0.009	0.002
0.001	0.005
0.000	0.000
0.011	0.002
0.009	-0.014
0.038	0.004
0.007	0.002
-0.011	-0.018
0.022	0.016
0.025	-0.035
0.022	-0.002
0.007	-0.021
0.062	0.020
0.035	0.005
0.045	-0.005
-0.007	-0.011
-0.013	-0.024
0.019	0.045
0.013	0.000
0.062	-0.007
0.055	-0.013
0.043	0.005
0.038	-0.024
0.024	-0.031
0.048	-0.023
0.022	-0.040
0.026	-0.008
0.014	0.005
0.024	0.003
0.030	0.008
0.011	0.002
0.017	0.000
0.016	0.007
0.003	0.007
0.041	0.010
0.034	0.026
k.a	0.019 -0.002
std	0.020 0.016