

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

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

Muunnoksen painopisteeksi on annettu Porvoon kaupungin keskuspuiteen 21001 koordinaatit.

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

Muunnosparametrit	
x0	337.139
y0	-24000030.901
a	1.0000051526
b	0.0000087478
scale factor	1.0000051526
rotation (deg)	0.0005012074

Painopiste lähtöjärjestelmässä	
6698804.963	27426192.982

Painopiste tulosjärjestelmässä	
6698936.700	3426361.996

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

Apusuureet	
I	2962705633
II	2962720898
III	25917

TARKISTUS

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

Muunnettavat pisteet				
ID	lähtöjärjestelmä		tulojärjestelmä	
	x	y	x'	y'
10	6697976.388	27427023.03	6698108.113	3427192.044
36	6700867.976	27428566.410	6700999.703	3428735.454
714	6701212.704	27424871.393	6701344.465	3425040.421
717	6696502.735	27428579.172	6696634.439	3428748.178
17_vara	6697821.437	27424568.639	6697953.183	3424737.636
35_vara	6709919.416	27434433.390	6710051.138	3434602.544
2061	6694497.478	27432539.402	6694629.137	3432708.411
2062	6704170.468	27432163.151	6704302.180	3432332.243
2063	6703595.075	27426736.815	6703726.832	3426905.874
21001	6698804.963	27426192.982	6698936.700	3426361.996
2295	6706727.902	27434013.642	6706859.611	3434182.766
513405	6709583.232	27419955.114	6709715.079	3420124.190
734304	6690725.954	27436856.850	6690857.556	3437025.848
873105	6707216.591	27427370.642	6707348.361	3427539.736
00G0034	6688672.654	27416561.844	6688804.423	3416730.720
00G0036	6687487.352	27442421.888	6687618.889	3442590.887
00M2002B	6703552.246	27413534.060	6703684.118	3413703.050
00M4907	6698745.769	27430352.519	6698877.469	3430521.554
28M2904	6694492.041	27424142.953	6694623.774	3424311.919
28M2910	6681872.462	27432677.115	6682004.055	3432846.014
28M2911	6689367.053	27432740.021	6689498.684	3432908.986
28M2915	6696510.578	27437170.158	6696642.207	3437339.208
29M2992	6702805.618	27421898.101	6702937.413	3422067.128
73M7111	6703160.187	27417338.133	6703292.024	3417507.139
90M0101	6677538.852	27423731.222	6677670.501	3423900.037
90M1005B	6686832.725	27423225.598	6686964.426	3423394.492
90M2611	6683354.476	27410966.608	6683486.267	3411135.408
90M2613	6689209.893	27409844.966	6689341.724	3410013.812
90M5317	6680873.002	27414315.045	6681004.751	3414483.841
90M5326	6700479.573	27406968.418	6700611.487	3407137.348
90M9002G	6695476.056	27419636.959	6695607.833	3419805.910
92M5537	6696960.164	27414078.889	6697091.997	3414247.824
92M5549	6709254.284	27414480.685	6709376.177	3414649.730
93M4323	6692219.204	27429650.354	6692350.877	3429819.328
93M5518B	6687716.058	27426391.362	6687847.736	3426560.280
93M5519B	6694617.017	27442455.608	6694748.590	3442624.669
93M5521A	6700556.438	27440855.313	6700688.056	3441024.418
93M5522A	6700943.532	27435676.934	6701075.197	3435846.016
93M5535A	6684983.049	27421474.388	6685114.756	3421643.257
93M5542A	6710387.066	27428143.240	6710518.846	3428312.365
93M5546	6717096.309	27435205.048	6717228.061	3435374.268
93M5551	6683470.702	27438376.358	6683602.253	3438545.301
96M9602D	6676202.444	27434930.002	6676333.988	3435098.863

Tunnetut arvot		
ID	x'	y'
10	6698108.117	3427192.039
36	6700999.695	3428735.464
714	6701344.461	3425040.439
717	6696634.432	3428748.182
17_vara	6697953.182	3424737.628
35_vara	6710051.148	3434602.545
2061	6694629.164	3432708.409
2062	6704302.189	3432332.245
2063	6703726.833	3426905.879
21001	6698936.700	3426361.996
2295	6706859.622	3434182.768
513405	6709715.088	3420124.176
734304	6690857.594	3437025.852
873105	6707348.368	3427539.738
00G0034	6688804.412	3416730.702
00G0036	6687618.911	3442590.903
00M2002B	6703684.143	3413703.015
00M4907	6698877.491	3430521.552
28M2904	6694623.781	3424311.898
28M2910	6682004.117	3432846.034
28M2911	6689498.719	3432908.991
28M2915	6696642.252	3437339.203
29M2992	6702937.406	3422067.117
73M7111	6703292.011	3417507.115
90M0101	6677670.520	3423900.082
90M1005B	6686964.439	3423394.492
90M2611	6683486.329	3411135.401
90M2613	6689341.779	3410013.799
90M5317	6681004.794	3414483.846
90M5326	6700611.525	3407137.324
90M9002G	6695607.857	3419805.879
92M5537	6697092.045	3414247.801
92M5549	6709376.199	3414649.690
93M4323	6692350.903	3429819.320
93M5518B	6687847.750	3426560.285
93M5519B	6694748.614	3442624.672
93M5521A	6700688.086	3441024.426
93M5522A	6701075.208	3435846.018
93M5535A	6685114.773	3421643.257
93M5542A	6710518.862	3428312.372
93M5546	6717228.064	3435374.275
93M5551	6683602.294	3438545.311
96M9602D	6676334.022	3435098.889

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