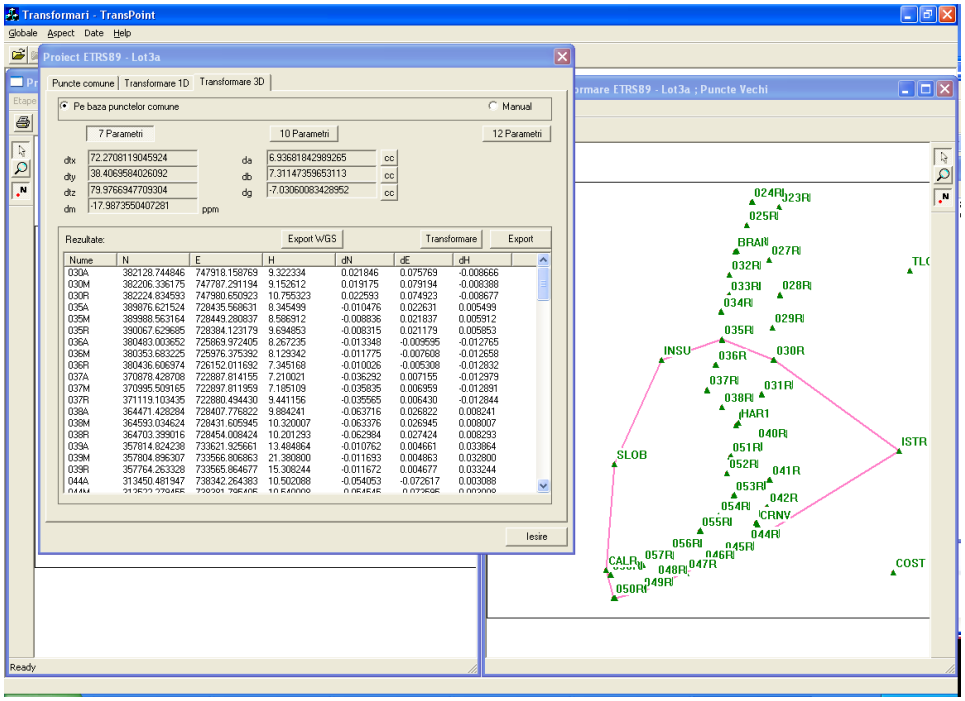
DOSARUL PARAMETRILOR DE TRANSFORMARE

Stabilirea parametrilor de transformare din coordonate geografice (WGS 84) catre sistemul național STEREO 70 si suprafața de referință Marea Neagra 75



Rețeaua Geodezică de Sprijin

AFDJ 2014

Beneficiar: **Administrația Fluvială a Dunării de Jos RA, Galați**

Executanți: **Interconstruct SRL**

TehnoGIS Grup SRL

Consultant: **Universitatea Tehnică de Construcții București**

- 2014 –

STABILIREA PARAMETRILOR DE TRANSFORMARE

Considerente generale

Subcomisia IAG pentru Rețeaua de Referință Europeană - EUREF a adoptat în 1990 (la Florența în italia) conform Rezoluției nr. 1, recomandările prin care noul sistem de referință ETRS89 este propus a fi utilizat de către toate statele europene.
ETRS89 a fost adoptat de către Comisia Europeană în anul 2003 (prin decizia - ref COGI-F/GIS/69/EN) şi este recomandat deasemenea de către *EuroGeographics* – organizația care reuneşte agențiile de cadastru şi cartografie din Europa. EuroGeographics a delegat în 2004 un grup de experți în geodezie - *ExGG* (Expert Group on Geodesy), care are între sarcini şi cea de a menține contactul cu EUREF în ceea ce priveşte adoptarea şi validarea rezultatelor ETRS89 în țările europene. Comisia Europeană a descris ETRS89 în cadrul unui document adoptat intitulat *„Spatial Reference Systems for Europe”* (EUR 19575).

Acest sistem de referință şi coordonate este descris în prezent de către EUREF conform standardului *ISO19111 (Spatial Referencing by Coordinates – Referențierea Spațială prin Coordonate).*
ETRS89 a fost transpus în practică după 1990 prin campanii de măsurători şi determinare a coordonatelor în puncte materializate în teren din fiecare țară. Odată cu dezvoltarea tehnologiilor GNSS, ETRS89 este menținut prin intermediul EUREF – *EPN*
(EUREF Permanent Network), care constă într-un număr de peste 200 de stații GNSS permanente, care măsoară în mod continuu utilizând sateliții *GPS* (SUA) şi *GLONASS*(Rusia), iar apoi pe baza datelor colectate se determină coordonatele acestor puncte. Pe de altă parte EUREF-EPN constituie contribuția europeană la îndesirea rețelei de referință globale menținute de *IGS* (IGS - International GNSS Service – Serviciul Internațional GNSS) şi contribuie la realizarea ITRS.

Parlamentul şi Comisia Europeană au adoptat în martie 2007, *Directiva INSPIRE-(INfrastructure for SPatial InfoRmation in Europe – Infrastructura pentru Informația Spațială în Europa),* care precizează necesitatea furnizării către utilizatori a unor servicii informatice spațiale integrate. Aceste servicii ar trebui să permită utilizatorilor să identifice şi să acceseze informația geografică sau spațială de la surse de date diferite, la nivel local sau global, într-un mod interoperabil pentru o gamă variată de scopuri. Una din prevederile directivei este şi cea referitoare la adoptarea unui Sistemul de Referință şi Coordonate (SRC) unitar pentru țările membre ale UE.

În România, în prezent SRC utilizat este *sistemul S42 (S42)*, care are la bază *elipsoidul Krasovski 1940* şi *planul de proiecție stereografic 1970*. Acest sistem S42, a fost realizat împreună cu fostele țări socialiste acoperind o mare parte a zonei central şi est europene.

S42 a fost realizat prin utilizarea mijloacelor clasice (optice) de măsurare asigurându-se cerințele de precizie de la momentul realizării. Transpunerea în practică a sistemului de referință s-a realizat printr-o rețea de triangulație care acoperea întregul teritoriu. Acest sistem de referință poate fi considerat ca fiind unul local având în vedere că nu era geocentric în adevăratul sens, cotele elipsoidale fiind cunoscute cu o precizie slabă (deoarece nu s-a determinat un model precis de geoid/cvasigeoid), iar coordonatele plane sunt determinate într-un plan de proiecție particular (numai pentru România) – planul stereografic 1970 (fig. 1).

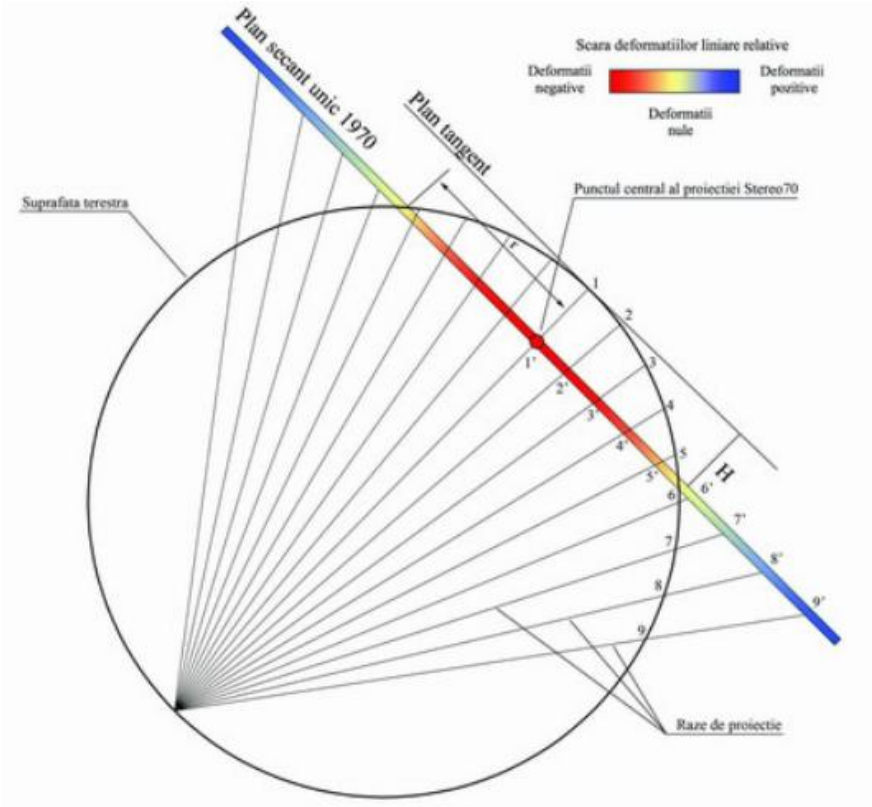


Fig. 1 Proiecția oblică stereografică 1970 cu plan secant

Sistemul de referință are la bază adoptarea unor puncte de referință (fundamentale), concept care în momentul de față a fost modernizat prin adoptarea punctelor de referință determinate cu ajutorul sateliților, care au coordonate geocentrice cu adevărat tridimensionale, determinate cu precizii centimetrice sau chiar milimetrice.

Necesitatea cooperării la nivel european şi global în domeniul geodeziei şi cartografiei, dezavantajele actuale ale *S42* şi perspectivele deschise de determinările de poziție cu ajutorul sateliților artificiali, au impus adoptarea în țara noastră a S*istemului de Referință şi Coordonate (SRC) ETRS89*, pentru o gamă largă de lucrări din diferite domenii de activitate.

În această situație, problema care se pune este determinarea unor parametri sau a unor relații de calcul necesare trecerii de la coordonate determinate precis în sistemul ETRS89 utilizând tehnologie GPS la sistemul S42, planul de proiecție Stereo 1970.

Problema care se pune este că cei doi elipsoizi ETRS89 şi Krassovski nu sunt la fel poziționați față de centrul pământului şi nici nu au planurile de coordonate paralele. Prin urmare nu există o formulă punctuală pentru transformarea de coordonate de pe un elipsoid pe altul fiind astfel necesară utilizarea unui grup de puncte cu coordonate comune prin care să se determine parametrii de transformare care includ trei translații, trei rotații şi un factor de scară. Această transformare T1 în fig. 3

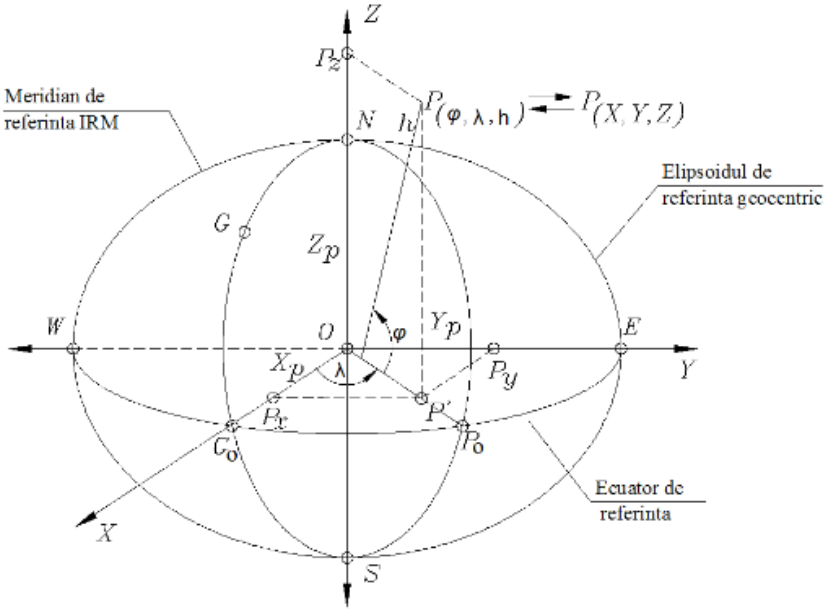


Fig. 2 Coordonate geodezice elipsoidale şi geocentrice pe elipsoidul ETRS89

Prin această abordare erorile datelor inițiale adică erorile existente în poziția punctelor care alcătuiesc rețeaua națională se propagă "stricând" practic precizia milimetrică a determinărilor GPS cu cea decimetrică a punctelor vechi (din rețeaua națională). Acest fapt mai produce şi o inconsistență a determinărilor bazate pe tehnicile GNSS atunci când nu se folosesc aceleaşi puncte vechi în transformările respective. Transformarea coordonatelor geocentrice rezultate pe elipsoidul Krassovski în coordonate stereografice 1970 pe acelaşi elipsoid este o transformare bazată pe formule matematice care se aplică punct cu punct, deci este o aşa numită transformare punctuală T2 în fig. 3. Aceasta nu propagă erori ci conservă preciziile inițiale

Pentru a asigura condițiile tehnice necesare astfel încât deetrminările parametrilor de transformare să asigure precizia cerută de determinare de 10cm pe cele trei axe carteziene, vom folosi ca puncte comune chiar punctele din rețeaua AFDJ2014 determinate utilizând programul TRANSDAT pus la dispoziție de ANCPI. Astfel parametrii de transformare se determină de fapt în transformarea T1 utilizand coordonatele geodezice pe ETRS89 şi coordonatele obținute cu Transdat X, Y, H din sistemul de proiecție stereo1970. urmând ca printr-o transformare punctuală T2 să se determine poziția în sistemul de proiecție Stereo1970, respectiv sistemul de altitudini. În acest fel, tehnologiile GNSS vor putea fi aplicate în zona rețelei AFDJ2014 pe o distanță de cel puțin 5km în jurul acestor borne astfel încât coordonatele geodezice obținute pe ETRS89 să poată fi transformate în stereo 70 utilizând parametri de transformare calculați şi prezentați în dosarul parametrilor de transformare.

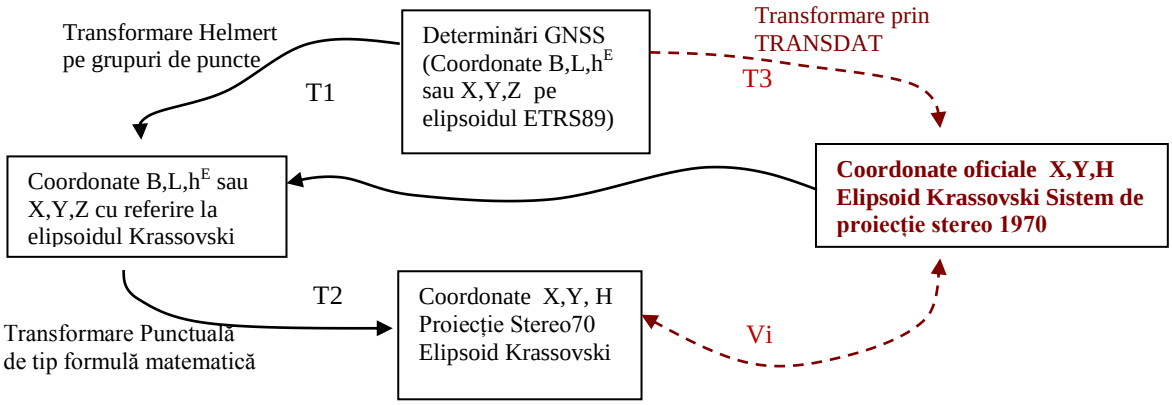


Fig. 3 Transformarea de coordonate din sistemul ETRS89 în planul de proiecție stereo 1970

Pentru transformarea cotei elipsoidale în cotă normală față de planul de referință cu punct fundamental 0 Constanța 1975 se folosește același principiu ca la determinarea cvasigeoidului, respectiv formulele de transformare cu 3, 6 şi 10 parametri în funcție de suprafața acoperită de o rețea de puncte cu cote comune în cele două sisteme (cotă elipsoidală şi cotă normală) şi de numărul acestor puncte cu cote comune.

Parametri de transformare au fost calculați cu programul GPSTools şi în funcție de configurație şi de dispunerea punctelor au fost utilizate transformări cu termeni corectivi obținânduse transformări cu 7, 10 şi 12 parametri.

Astfel pentru ca parametrii de transformare să poată fi utilizați ulterior, atunci când există determinări GNSS în vecinătatea locațiilor rețelei AFDJ2014, personalul AFDJ va trebui să utilizeze în programul GPSTools aceleaşi configurații de puncte cu care s-au determinat parametrii de transformare din zona noilor puncte. Practic, la setul de coordonate comune a punctelor utilizate în transformarea inițială, se adaugă coordonatele GNSS ale punctului nou şi se repetă transformarea cu aceiaşi parametri de transformare.

Pentru verificarea încadrării în precizia de transformare de 10 cm pe cele 3 axe de coordonate s-au efectuat verificările Vi din fig. 3 prin calculul diferenței dintre coordonatele calculate cu parametrii de transformare şi coordonatele calculate cu Transdat.

Rezultatele acestor determinări sunt cuprinse în prezentul dosar al parametrilor de transformare.

Rețeaua AFDJ2014 a fost împărțită în mai multe zone pentru care s-au determinat parametrii de transformare. Astfel pentru fiecare zonă corespunde o listă de locații AFDJ.

Parametrii de transformare ai zonei vor fi utilizați prin intermediul programului GPSTools pentru transformarea coordonatelor geodezice elipsoidale, obținute prin tehnologie GNSS la puncte noi din interiorul zonei respective, în coordonate stereo70 şi cote MN75.

Pentru fiecare astfel de zonă sunt evidențiate în continuare:

- Inventarul de coordonate inițial obținut cu TRANSDAT
- Inventarul de coordonate determinat cu parametri de transformare şi diferențele față de coordonatele inițiale care sunt o măsură a preciziei obținute.
- Imaginea din softul GPSTools a zonei de calcul a parametrilor de transformare care indică de fapt regiunea de utilizare a parametrilor de transformare. Practic, punctele noi trebuie să se afle în interiorul acelor zone. Operatorul GNSS va indentifica zona de calcul după locația cea mai apropiată de punctul nou. Vor fi utilizați acei parametri corespunzători zonei în care există locația respectivă.
- Parametrii de transformare pentru transformarea cotei elipsoidale în cotă normală
- Parametrii de transformare pentru transformarea coordonatelor geodezice elipsoidale în coordonate Stereo70.

Rezultatele obținute cu programul GPSTools sunt prezentate în anexa 1 şi corespund fiecărei zone de calcul.

Coordonate obținute prin TRANSDAT Stereo 70 Lot 1 (locațiile 133 – 144)

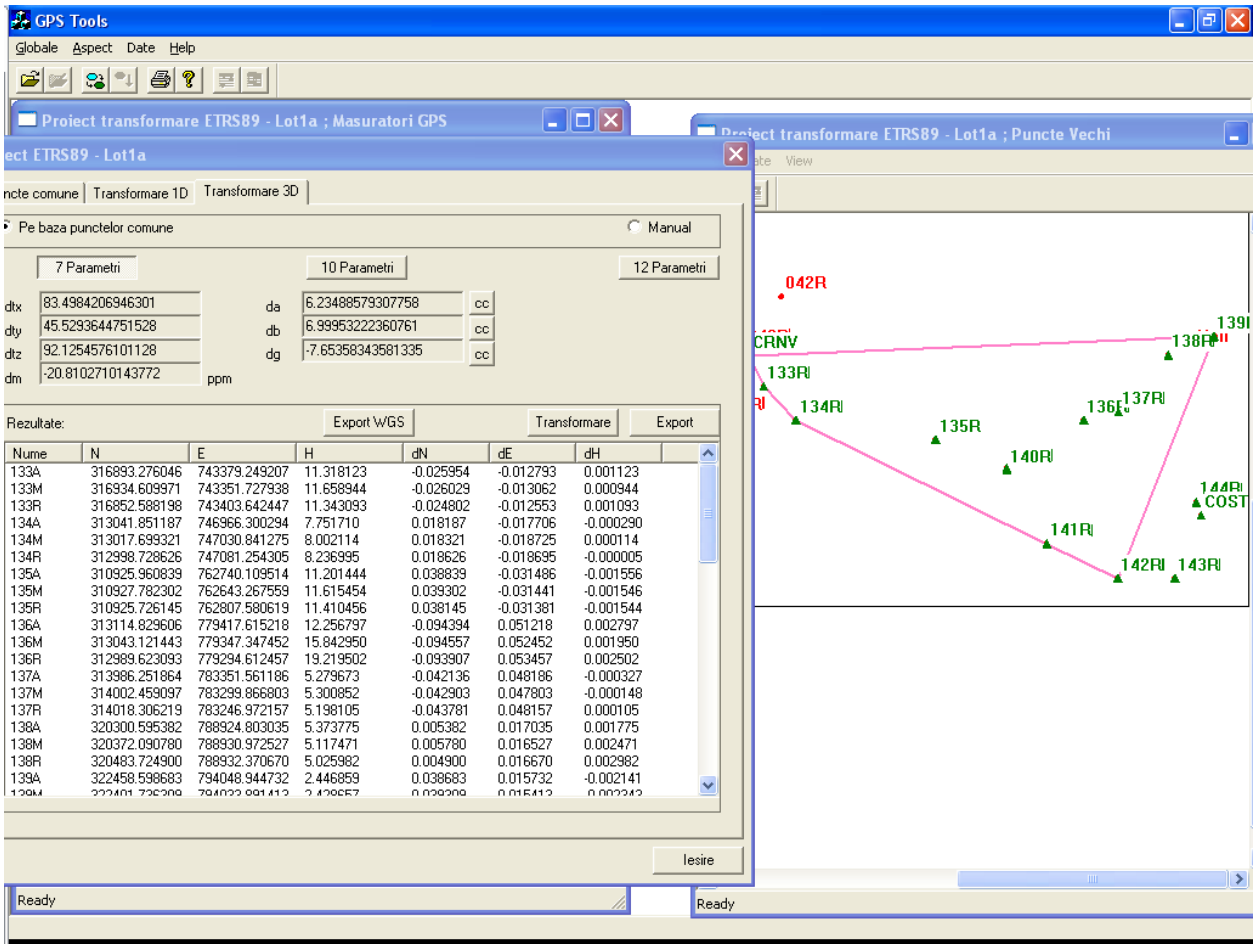
	Coordonate Stereo 70		
Borna	X	Y	H
133A	316893.302	743379.262	11.317
133M	316934.636	743351.741	11.658
133R	316852.613	743403.655	11.342
134A	313041.833	746966.318	7.752
134M	313017.681	747030.86	8.002
134R	312998.71	747081.273	8.237
135A	310925.922	762740.141	11.203
135M	310927.743	762643.299	11.617
135R	310925.688	762807.612	11.412
136A	313114.924	779417.564	12.254
136M	313043.216	779347.295	15.841
136R	312989.717	779294.559	19.217
137A	313986.294	783351.513	5.28
137M	314002.502	783299.819	5.301
137R	314018.35	783246.924	5.198
138A	320300.59	788924.786	5.372
138M	320372.085	788930.956	5.115
138R	320483.72	788932.354	5.023
139A	322458.56	794048.929	2.449
139M	322401.697	794033.876	2.431
139R	322459.387	794006.637	2.706
140A	307784.732	770680.965	11.223
140M	307561.348	770668.873	10.745
140R	307461.106	770706.184	10.836
141A	299077.702	775306.139	10.641
141M	299154.106	775287.635	10.93
141R	299227.329	775266.557	10.774
142A	295345.309	783345.494	59.437
142M	295341.315	783287.356	59.596
142R	295335.337	783232.493	59.189
143A	295330.587	789728.359	10.72
143M	295330.786	789647.904	10.875
143R	295346.607	789555.291	10.633
144A	303860.83	792083.127	30.371
144M	303825.026	792066.823	29.507
144R	303857.691	792056.501	30.392

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 1 locațiile 133 – 142)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
133A	316893.2760	743379.2492	11.3181	-0.0260	-0.0128	0.0011
133M	316934.6100	743351.7279	11.6589	-0.0260	-0.0131	0.0009
133R	316852.5882	743403.6424	11.3431	-0.0248	-0.0126	0.0011
134A	313041.8512	746966.3003	7.7517	0.0182	-0.0177	-0.0003
134M	313017.6993	747030.8413	8.0021	0.0183	-0.0187	0.0001
134R	312998.7286	747081.2543	8.2370	0.0186	-0.0187	0.0000
135A	310925.9608	762740.1095	11.2014	0.0388	-0.0315	-0.0016
135M	310927.7823	762643.2676	11.6155	0.0393	-0.0314	-0.0015
135R	310925.7261	762807.5806	11.4105	0.0381	-0.0314	-0.0015
136A	313114.8296	779417.6152	12.2568	-0.0944	0.0512	0.0028
136M	313043.1214	779347.3475	15.8430	-0.0946	0.0525	0.0020
136R	312989.6231	779294.6125	19.2195	-0.0939	0.0535	0.0025
137A	313986.2519	783351.5612	5.2797	-0.0421	0.0482	-0.0003
137M	314002.4591	783299.8668	5.3009	-0.0429	0.0478	-0.0001
137R	314018.3062	783246.9722	5.1981	-0.0438	0.0482	0.0001
138A	320300.5954	788924.8030	5.3738	0.0054	0.0170	0.0018
138M	320372.0908	788930.9725	5.1175	0.0058	0.0165	0.0025
138R	320483.7249	788932.3707	5.0260	0.0049	0.0167	0.0030
139A	322458.5987	794048.9447	2.4469	0.0387	0.0157	-0.0021
139M	322401.7363	794033.8914	2.4287	0.0393	0.0154	-0.0023
139R	322459.4262	794006.6535	2.7037	0.0392	0.0165	-0.0023
140A	307784.6759	770680.9938	11.2214	-0.0561	0.0288	-0.0016
140M	307561.2935	770668.9018	10.7429	-0.0545	0.0288	-0.0021
140R	307461.0516	770706.2133	10.8341	-0.0544	0.0293	-0.0019
141A	299077.7360	775306.1540	10.6450	0.0340	0.0150	0.0040
141M	299154.1387	775287.6508	10.9336	0.0327	0.0158	0.0036
141R	299227.3605	775266.5730	10.7782	0.0315	0.0160	0.0042
142A	295345.4079	783345.4071	59.4335	0.0989	-0.0869	-0.0035
142M	295341.4142	783287.2701	59.5931	0.0992	-0.0859	-0.0029
142R	295335.4367	783232.4081	59.1857	0.0997	-0.0849	-0.0033

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 133 – 142 (Lot 1)

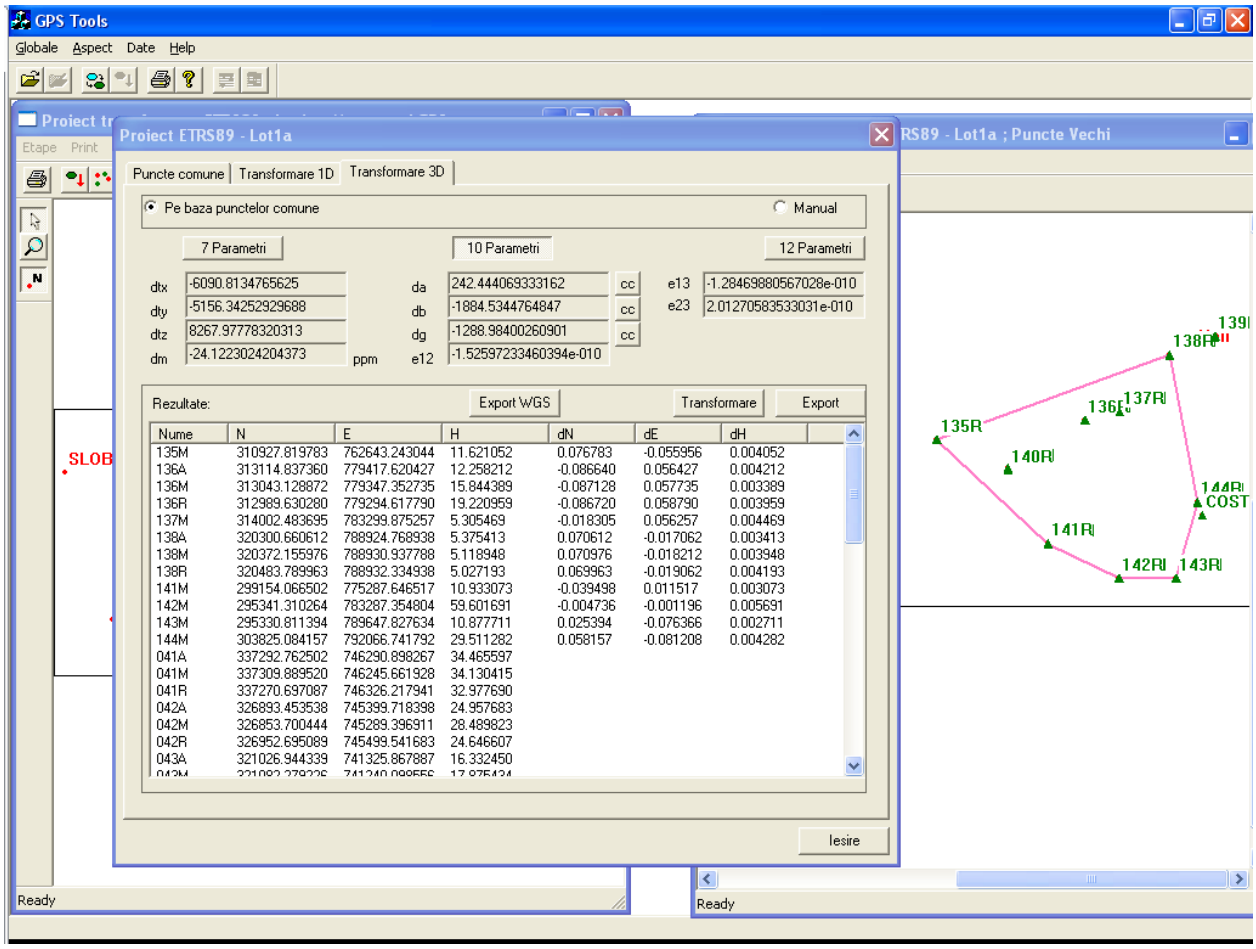


Parametri de transformare pentru lot 1 locațiile 133 – 142

Parametri de transformare pentru altimetrie (6 parametri):
p1 = 110.986804485321000
p2 = 0.000204271973416
p3 = 0.000216881744564
p4 = 0.000000000180783
p5 = -0.000000000416932
p6 = 0.000000000229720
.....

Parametri de transformare pentru planimetrie (10 parametri):
dtx = 83.498420694630099
dty = 45.529364475152803
dtz = 92.125457610112804
da = 6.234885793077580 cc
db = 6.999532223607610 cc
dg = -7.653583435813350 cc
dm = -20.810271014377200 ppm

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 143 – 144 (Lot 1)



Parametri de transformare pentru lot 1 locațiile 143 – 144

Parametri de transformare pentru altimetrie (6 parametri):
p1 = 133.431133270264010
p2 = 0.000290846246571
p3 = 0.000287996326733
p4 = 0.000000000116468
p5 = -0.000000000457872
p6 = 0.000000000294018
.....

Parametri de transformare pentru planimetrie (10 parametri):
dtx = -6090.813476562500000
dty = -5156.342529296879500
dtz = 8267.977783203130500
da = 242.444069333161990 cc
db = -1884.534476484700000 cc
dg = -1288.984002609010100 cc
dm = -24.122302420437300 ppm
e12 = -0.000000000152597
e13 = -0.000000000128470
e23 = 0.000000000201271

Coordonate obținute prin TRANSDAT Stereo 70 Lot 2
(locațiile 1 – 22)

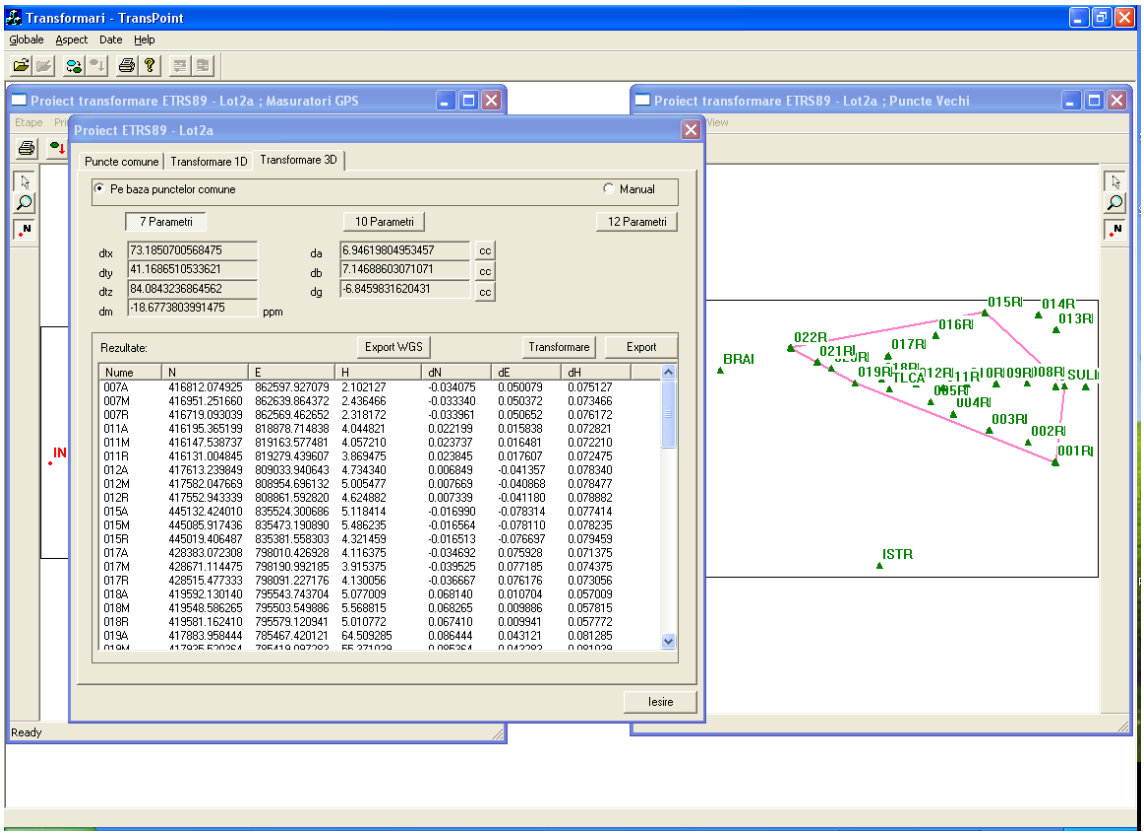
Borna	Coordonate Stereo 70		
	X	Y	H
001A	387619.011	862500.359	2.009
001M	387573.558	862594.650	2.240
001R	387776.344	862192.000	1.731
002A	395419.731	852131.411	2.459
002M	395468.422	852077.542	2.315
002R	395501.124	852040.313	2.364
003A	399808.126	837074.607	2.078
003M	399883.058	837096.587	4.756
003R	399845.401	837031.975	3.562
004A	406042.658	823278.386	4.066
004M	406133.112	823190.220	5.694
004R	406212.844	823101.107	3.969
005A	410695.994	814521.718	17.963
005M	410808.273	814488.086	15.239
005R	410699.932	814549.628	17.214
006A	416516.108	874096.232	1.210
006M	416481.212	874209.934	2.119
006R	416435.256	874160.324	1.743
007A	416812.109	862597.877	2.027
007M	416951.285	862639.814	2.363
007R	416719.127	862569.412	2.242
008A	418009.411	851593.114	2.308
008M	418009.563	851721.489	2.473
008R	418077.248	851684.273	2.212
009A	417764.365	839817.014	3.401
009M	417760.327	839633.990	3.582
009R	417757.636	839500.878	3.478
010A	417522.725	828227.220	3.319
010M	417547.169	828349.926	3.999
010R	417563.664	828432.101	3.518
011A	416195.343	818878.699	3.972
011M	416147.515	819163.561	3.985
011R	416130.981	819279.422	3.797
012A	417613.233	809033.982	4.656
012M	417582.040	808954.737	4.927
012R	417552.936	808861.634	4.546
013A	438320.109	862824.573	1.731
013M	438389.822	862750.980	2.075
013R	438437.712	862702.757	1.928
014A	444259.795	855659.850	1.413
014M	444199.348	855847.933	2.023
014R	444107.229	855989.776	1.246

Borna	Coordonate Stereo 70		
	X	Y	H
015A	445132.4	835524.4	5.041
015M	445085.9	835473.3	5.408
015R	445019.4	835381.6	4.242
016A	436453	816592.3	4.611
016M	436320.3	816485.8	5.386
016R	436200.8	816397.6	5.074
017A	428383.1	798010.4	4.045
017M	428671.2	798190.9	3.841
017R	428515.5	798091.2	4.057
018A	419592.1	795543.7	5.02
018M	419548.5	795503.5	5.511
018R	419581.1	795579.1	4.953
019A	417883.9	785467.4	64.428
019M	417935.4	785419.1	55.29
019R	417898.5	785398.2	54.462
020A	423598.8	776296.3	5.341
020M	423688.5	776368.9	5.469
020R	423759.5	776270.5	5.15
021A	426183.1	770760.3	6.46
021M	426208.3	770857.2	6.257
021R	426146.7	770635.2	6.014
022A	431555.5	760659.3	4.908
022M	431667.2	760588	5.943
022R	431463.3	760707.9	4.782

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 2 locațiile 1 – 5, 7, 11, 12, 15, 17 - 22)

Borna	Coordonate generate GPSTools			Diferențe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
001A	387619.012	862500.314	2.085	0.0006	-0.0449	0.0765
001M	387573.560	862594.604	2.316	0.0017	-0.0459	0.0765
001R	387776.341	862191.958	1.807	-0.0028	-0.0424	0.0756
002A	395419.683	852131.430	2.535	-0.0483	0.0191	0.0764
002M	395468.374	852077.561	2.391	-0.0484	0.0190	0.0761
002R	395501.076	852040.332	2.441	-0.0479	0.0187	0.0766
003A	399808.169	837074.635	2.120	0.0432	0.0279	0.0421
003M	399883.101	837096.615	4.798	0.0429	0.0279	0.0416
003R	399845.444	837032.002	3.604	0.0433	0.0273	0.0422
004A	406042.685	823278.426	4.148	0.0265	0.0404	0.0824
004M	406133.138	823190.260	5.777	0.0258	0.0396	0.0835
004R	406212.869	823101.146	4.053	0.0250	0.0390	0.0843
005A	410695.998	814521.691	18.059	0.0038	-0.0267	0.0958
005M	410808.277	814488.060	15.334	0.0038	-0.0264	0.0953
005R	410699.936	814549.602	17.310	0.0036	-0.0264	0.0957
007A	416812.075	862597.927	2.102	-0.0341	0.0501	0.0751
007M	416951.252	862639.864	2.436	-0.0333	0.0504	0.0735
007R	416719.093	862569.463	2.318	-0.0340	0.0507	0.0762
011A	416195.365	818878.715	4.045	0.0222	0.0158	0.0728
011M	416147.539	819163.577	4.057	0.0237	0.0165	0.0722
011R	416131.005	819279.440	3.869	0.0238	0.0176	0.0725
012A	417613.240	809033.941	4.734	0.0068	-0.0414	0.0783
012M	417582.048	808954.696	5.005	0.0077	-0.0409	0.0785
012R	417552.943	808861.593	4.625	0.0073	-0.0412	0.0789
015A	445132.424	835524.301	5.118	-0.0170	-0.0783	0.0774
015M	445085.917	835473.191	5.486	-0.0166	-0.0781	0.0782
015R	445019.406	835381.558	4.321	-0.0165	-0.0767	0.0795
017A	428383.072	798010.427	4.116	-0.0347	0.0759	0.0714
017M	428671.114	798190.992	3.915	-0.0395	0.0772	0.0744
017R	428515.477	798091.227	4.130	-0.0367	0.0762	0.0731
018A	419592.130	795543.744	5.077	0.0681	0.0107	0.0570
018M	419548.586	795503.550	5.569	0.0683	0.0099	0.0578
018R	419581.162	795579.121	5.011	0.0674	0.0099	0.0578
019A	417883.958	785467.420	64.509	0.0864	0.0431	0.0813
019M	417935.520	785419.097	55.371	0.0854	0.0433	0.0810
019R	417898.615	785398.276	54.544	0.0853	0.0428	0.0816
020A	423598.826	776296.329	5.391	-0.0008	0.0159	0.0501
020M	423688.515	776368.939	5.517	-0.0020	0.0169	0.0484
020R	423759.468	776270.512	5.199	-0.0029	0.0170	0.0487
021A	426183.040	770760.283	6.519	-0.0376	-0.0183	0.0589
021M	426208.247	770857.164	6.315	-0.0378	-0.0173	0.0577
021R	426146.664	770635.195	6.074	-0.0371	-0.0202	0.0603
022A	431555.439	760659.189	4.987	-0.0762	-0.0638	0.0794
022M	431667.147	760587.960	6.023	-0.0777	-0.0630	0.0795
022R	431463.191	760707.874	4.861	-0.0748	-0.0643	0.0785

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 1 – 5, 7, 11, 12, 15, 17 - 22 (Lot 2)



Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 2

Parametri de transformare pentru lot 2 locațiile 1 – 5, 7, 11, 12, 15, 17 - 22

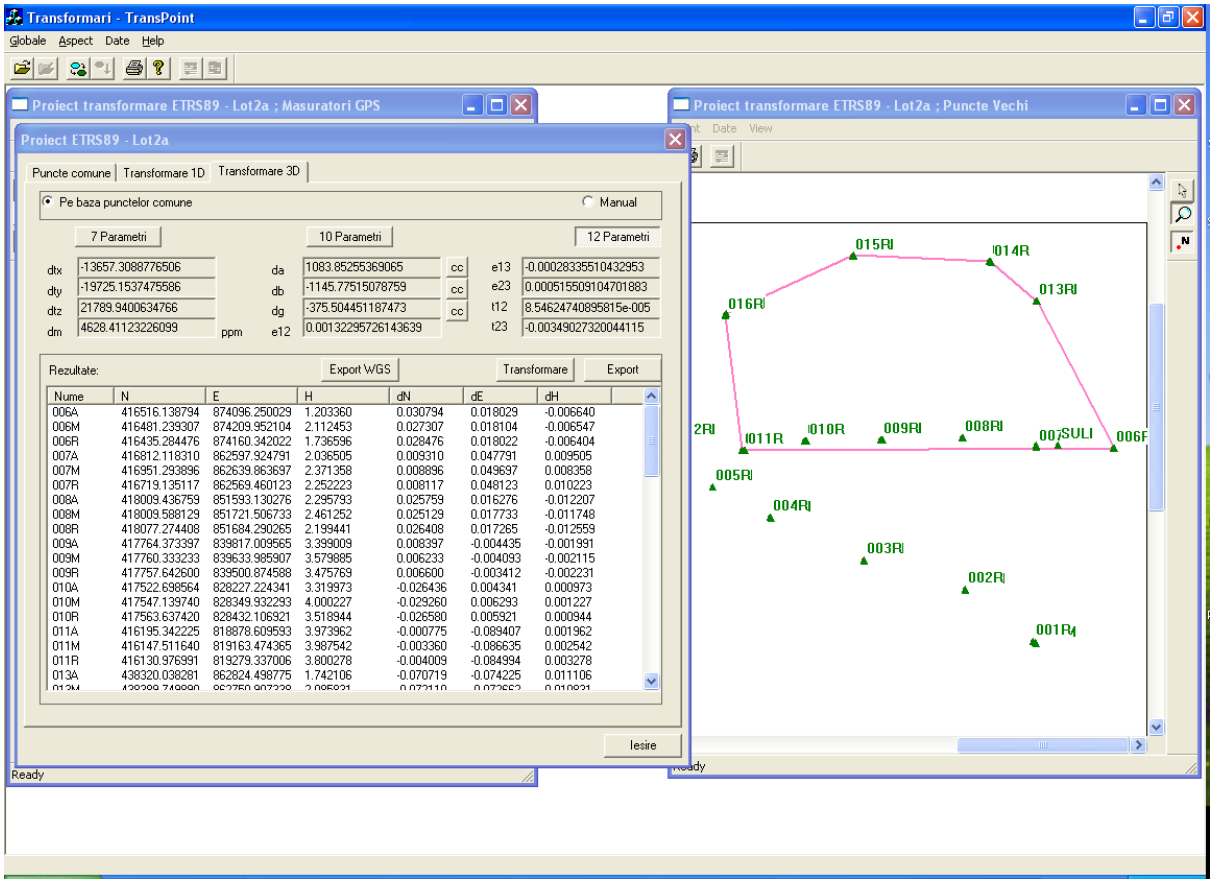
Parametri de transformare pentru altimetrie (10 parametri):
p1 = 7075.926757812500000
p2 = 0.014532221481204
p3 = -0.021914765238762
p4 = 0.000000015183950
p5 = 0.000000037959815
p6 = 0.000000008137006
p7 = -0.000000000000001
p8 = -0.000000000000016
p9 = -0.000000000000015
p10 = -0.000000000000001
.....
Parametri de transformare pentru planimetrie (7 parametri):
dtx = 73.185070056847493
dty = 41.168651053362098
dtz = 84.084323686456202
da = 6.946198049534570 cc
db = 7.146886030710710 cc
dg = -6.845983162043100 cc
dm = -18.677380399147498 ppm

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 2 locațiile 6, 8 -10, 13, 14, 16)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
006A	416516.1388	874096.2500	1.2034	0.0308	0.0180	-0.0066
006M	416481.2393	874209.9521	2.1125	0.0273	0.0181	-0.0065
006R	416435.2845	874160.3420	1.7366	0.0285	0.0180	-0.0064
007A	416812.1183	862597.9248	2.0365	0.0093	0.0478	0.0095
007M	416951.2939	862639.8637	2.3714	0.0089	0.0497	0.0084
007R	416719.1351	862569.4601	2.2522	0.0081	0.0481	0.0102
008A	418009.4368	851593.1303	2.2958	0.0258	0.0163	-0.0122
008M	418009.5881	851721.5067	2.4613	0.0251	0.0177	-0.0117
008R	418077.2744	851684.2903	2.1994	0.0264	0.0173	-0.0126
009A	417764.3734	839817.0096	3.3990	0.0084	-0.0044	-0.0020
009M	417760.3332	839633.9859	3.5799	0.0062	-0.0041	-0.0021
009R	417757.6426	839500.8746	3.4758	0.0066	-0.0034	-0.0022
010A	417522.6986	828227.2243	3.3200	-0.0264	0.0043	0.0010
010M	417547.1397	828349.9323	4.0002	-0.0293	0.0063	0.0012
010R	417563.6374	828432.1069	3.5189	-0.0266	0.0059	0.0009
011A	416195.3422	818878.6096	3.9740	-0.0008	-0.0894	0.0020
011M	416147.5116	819163.4744	3.9875	-0.0034	-0.0866	0.0025
011R	416130.9770	819279.3370	3.8003	-0.0040	-0.0850	0.0033
013A	438320.0383	862824.4988	1.7421	-0.0707	-0.0742	0.0111
013M	438389.7499	862750.9073	2.0858	-0.0721	-0.0727	0.0108
013R	438437.6420	862702.6838	1.9384	-0.0700	-0.0732	0.0104
014A	444259.8121	855659.8207	1.3969	0.0171	-0.0293	-0.0161
014M	444199.3600	855847.9043	2.0075	0.0120	-0.0287	-0.0155
014R	444107.2429	855989.7451	1.2315	0.0139	-0.0309	-0.0145
015A	445132.4893	835524.4215	5.0500	0.0483	0.0425	0.0090
015M	445085.9803	835473.3122	5.4166	0.0463	0.0432	0.0086
015R	445019.4738	835381.6770	4.2500	0.0508	0.0420	0.0080
016A	436453.0113	816592.3663	4.6058	-0.0067	0.0683	-0.0052
016M	436320.2572	816485.8761	5.3803	-0.0098	0.0691	-0.0057
016R	436200.8311	816397.6479	5.0673	-0.0069	0.0679	-0.0067

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 2

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 6, 8 -10, 13, 14, 16 (Lot 2)



Parametri de transformare pentru lot 2 locațiile 6, 8 -10, 13, 14, 16

Parametri de transformare pentru altimetrie (6 parametri):

p1 = -160.291122555733010
p2 = -0.000424212529651
p3 = 0.000249878981094
p4 = 0.000000000418688
p5 = -0.000000000688983
p6 = -0.000000000075579
.....

Parametri de transformare pentru planimetrie (12 parametri):

dtx = -13657.308877650599000
dty = -19725.153747558601000
dtz = 21789.940063476599000
da = 1083.852553690650000 cc
db = -1145.775150787590100 cc
dg = -375.504451187473020 cc
dm = 4628.411232260989900 ppm
e12 = 0.001322957261436
e13 = -0.000283355104330
e23 = 0.000515509104702
t12 = 0.000085462474090
t21 = -0.003490273200441

Coordonate obținute prin TRANSDAT Stereo70 Lot 3
(locațiile 23 – 58)

Borna	Coordonate Stereo 70		
	X	Y	H
023A	439607.9770	749901.5490	7.9180
023M	439674.3860	749913.0540	6.9580
023R	439720.8160	749989.0990	7.4880
024A	441648.4780	739853.1700	7.6010
024M	441576.8140	739771.4330	7.6500
024R	441528.3370	739716.8590	7.5320
025A	432925.2700	737731.9200	6.3270
025M	433020.3190	737750.4680	7.3270
025R	432795.0910	737728.2300	6.4480
026A	423149.7340	733893.5650	8.5760
026M	423257.7300	733953.2280	8.5470
026R	423340.5350	733965.6530	8.0910
027A	419789.2940	746078.0760	6.8470
027M	419904.5960	746072.2490	6.8800
027R	420008.3970	746087.2020	6.1010
028A	406464.3520	750157.0390	6.7860
028M	406560.7310	750097.2300	6.9700
028R	406683.4130	750022.5430	6.4210
029A	394441.1450	747285.4810	7.6830
029M	394330.7460	747276.5670	7.7940
029R	394272.2440	747275.1930	7.6370
030A	382128.7230	747918.0830	9.3310
030M	382206.3170	747787.2120	9.1610
030R	382224.8120	747980.5760	10.7640
031A	369670.6390	743265.6070	7.0960
031M	369559.2160	743236.4180	7.7230
031R	369381.3380	743181.5270	7.2910
032A	414382.5590	731188.5710	9.6570
032M	414313.4610	731091.7450	9.8470
032R	414418.0520	731124.0760	9.2650
033A	406726.8160	731132.2880	8.0430
033M	406641.7300	731114.1990	7.7670
033R	406615.1570	731046.2650	6.7530
034A	400468.1020	728211.0120	6.5940
034M	400340.2220	728187.3490	6.3430
034R	400158.5120	728154.3930	6.0210
035A	389876.6320	728435.5460	8.3400
035M	389988.5720	728449.2590	8.5810
035R	390067.6380	728384.1020	9.6890
036A	380483.0170	725869.9820	8.2800
036M	380353.6950	725976.3830	8.1420
036R	380436.6170	726152.0170	7.3580

Borna	Coordonate Stereo 70		
	X	Y	H
037A	370878.4650	722887.8070	7.2230
037M	370995.5450	722897.8050	7.1980
037R	371119.1390	722880.4880	9.4540
038A	364471.4920	728407.7500	9.8760
038M	364593.0980	728431.5790	10.3120
038R	364703.4620	728453.9810	10.1930
039A	357814.8350	733621.9210	13.4510
039M	357804.9080	733566.8020	21.3480
039R	357764.2750	733565.8600	15.2750
040A	350939.0780	741112.0350	28.8160
040M	351050.5170	741097.2150	28.1390
040R	351156.6840	741075.5890	26.5900
041A	337292.7690	746290.6150	34.3310
041M	337309.8950	746245.3770	33.9960
041R	337270.7040	746325.9360	32.8440
042A	326893.3760	745399.5820	24.8910
042M	326853.6210	745289.2590	28.4230
042R	326952.6200	745499.4060	24.5800
043A	321026.7270	741325.7320	16.2720
043M	321082.0610	741239.9610	17.8140
043R	321022.0340	741236.5290	16.5450
044A	313450.5360	738342.3370	10.4990
044M	313522.3340	738381.8690	10.5370
044R	313355.1030	738284.3880	10.6570
045A	308828.8390	728836.7560	11.2690
045M	308804.4480	728781.4690	11.4800
045R	308778.8470	728732.0610	11.5300
046A	305465.2620	721414.0870	12.0210
046M	305435.1800	721347.6430	12.3370
046R	305383.9540	721235.5900	12.3210
047A	302140.2610	714831.9360	16.0380
047M	302051.9500	714779.9230	16.7370
047R	302261.8210	714938.3600	14.8040
048A	300073.0060	703566.0570	15.2600
048M	300096.0070	703693.7120	14.8050
048R	300038.7320	703467.6070	14.8790
049A	295499.9650	698319.2660	19.2540
049M	295444.4160	698329.7870	24.0330
049R	295348.3720	698343.7790	21.4700

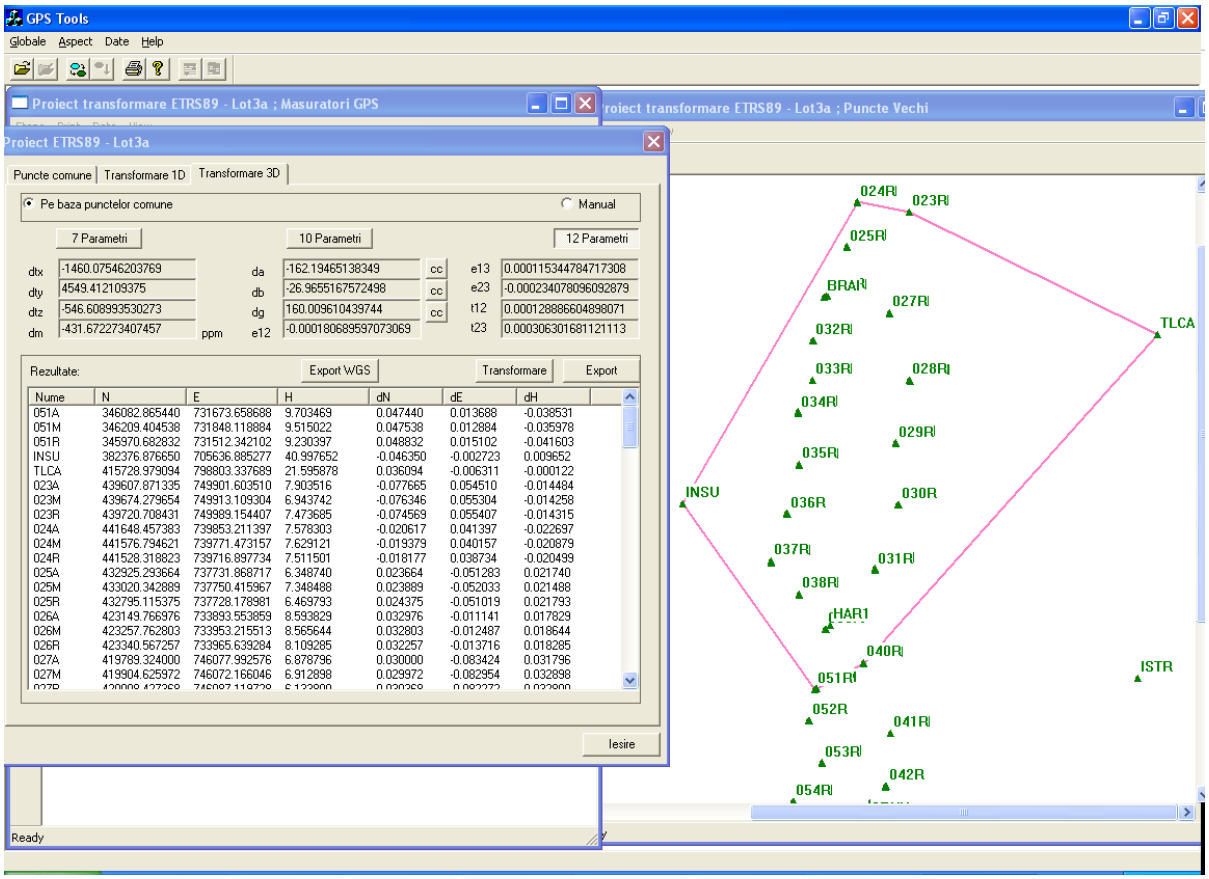
Borna	Coordonate Stereo 70		
	X	Y	H
050A	292813.7680	688129.6940	30.4500
050M	292777.3050	688253.3710	30.0050
050R	292925.4720	687868.7900	31.4560
051A	346082.8180	731673.6450	9.7420
051M	346209.3570	731848.1060	9.5510
051R	345970.6340	731512.3270	9.2720
052A	339859.9530	730227.8320	21.4990
052M	339741.9550	730285.2700	19.7410
052R	339803.1630	730398.3270	19.8800
053A	331697.6850	732955.0380	10.0280
053M	331560.2660	732925.2260	12.0480
053R	331419.1180	732890.5090	10.0400
054A	323986.0510	727267.8130	12.7120
054M	323955.5500	727242.9580	13.4660
054R	323841.2630	727200.8920	12.5590
055A	318131.0870	720311.3740	11.9270
055M	318085.6630	720216.3100	12.3290
055R	318044.9480	720127.2520	12.4470
056A	310023.3730	709292.3210	12.9150
056M	309970.6360	709111.8780	13.1270
056R	309916.5250	708889.6030	13.1570
057A	305368.1130	698570.3510	18.2000
057M	305333.8170	698489.9500	18.7680
057R	305399.7370	698649.4750	18.2500
058A	301495.6380	686644.5750	16.1080

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 3 locațiile 23 – 40, 51)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
023A	439607.8713	749901.6035	7.9035	-0.0777	0.0545	-0.0145
023M	439674.2797	749913.1093	6.9437	-0.0763	0.0553	-0.0143
023R	439720.7084	749989.1544	7.4737	-0.0746	0.0554	-0.0143
024A	441648.4574	739853.2114	7.5783	-0.0206	0.0414	-0.0227
024M	441576.7946	739771.4732	7.6291	-0.0194	0.0402	-0.0209
024R	441528.3188	739716.8977	7.5115	-0.0182	0.0387	-0.0205
025A	432925.2937	737731.8687	6.3487	0.0237	-0.0513	0.0217
025M	433020.3429	737750.4160	7.3485	0.0239	-0.0520	0.0215
025R	432795.1154	737728.1790	6.4698	0.0244	-0.0510	0.0218
026A	423149.7670	733893.5539	8.5938	0.0330	-0.0111	0.0178
026M	423257.7628	733953.2155	8.5656	0.0328	-0.0125	0.0186
026R	423340.5673	733965.6393	8.1093	0.0323	-0.0137	0.0183
027A	419789.3240	746077.9926	6.8788	0.0300	-0.0834	0.0318
027M	419904.6260	746072.1660	6.9129	0.0300	-0.0830	0.0329
027R	420008.4274	746087.1197	6.1338	0.0304	-0.0823	0.0328
028A	406464.3334	750156.9751	6.7865	-0.0186	-0.0639	0.0005
028M	406560.7119	750097.1657	6.9714	-0.0191	-0.0643	0.0014
028R	406683.3942	750022.4792	6.4225	-0.0188	-0.0638	0.0015
029A	394441.1077	747285.5501	7.6668	-0.0373	0.0691	-0.0162
029M	394330.7088	747276.6355	7.7774	-0.0372	0.0685	-0.0166
029R	394272.2064	747275.2622	7.6206	-0.0376	0.0692	-0.0164
030A	382128.7163	747918.1211	9.3053	-0.0067	0.0381	-0.0257
030M	382206.3079	747787.2537	9.1372	-0.0091	0.0417	-0.0238
030R	382224.8062	747980.6122	10.7382	-0.0058	0.0362	-0.0258
031A	369670.6060	743265.6583	7.1027	-0.0330	0.0513	0.0067
031M	369559.1823	743236.4684	7.7301	-0.0337	0.0504	0.0071
031R	369381.3030	743181.5781	7.2991	-0.0350	0.0511	0.0081
032A	414382.5856	731188.5861	9.6549	0.0266	0.0151	-0.0021
032M	414313.4878	731091.7608	9.8452	0.0268	0.0158	-0.0018
032R	414418.0786	731124.0918	9.2628	0.0266	0.0158	-0.0022
033A	406726.8656	731132.2913	8.0253	0.0496	0.0033	-0.0177
033M	406641.7799	731114.2024	7.7483	0.0499	0.0034	-0.0187
033R	406615.2068	731046.2703	6.7346	0.0498	0.0053	-0.0184
034A	400468.1755	728211.0115	6.5718	0.0735	-0.0005	-0.0222
034M	400340.2941	728187.3496	6.3202	0.0721	0.0006	-0.0228
034R	400158.5818	728154.3942	5.9980	0.0698	0.0012	-0.0230
035A	389876.6302	728435.5626	8.3270	-0.0018	0.0166	-0.0130
035M	389988.5719	728449.2748	8.5676	-0.0001	0.0158	-0.0134
035R	390067.6388	728384.1166	9.6747	0.0008	0.0146	-0.0143
036A	380483.0070	725869.9619	8.2872	-0.0100	-0.0201	0.0072
036M	380353.6863	725976.3646	8.1499	-0.0087	-0.0184	0.0079
036R	380436.6098	726152.0011	7.3661	-0.0072	-0.0159	0.0081
037A	370878.4250	722887.8122	7.2110	-0.0400	0.0052	-0.0120
037M	370995.5055	722897.8100	7.1866	-0.0395	0.0050	-0.0114
037R	371119.1003	722880.4908	9.4428	-0.0387	0.0028	-0.0112
038A	364471.4095	728407.7647	9.8977	-0.0825	0.0147	0.0217
038M	364593.0160	728431.5933	10.3339	-0.0820	0.0143	0.0219
038R	364703.3805	728453.9956	10.2157	-0.0815	0.0146	0.0227
039A	357814.7891	733621.9119	13.4878	-0.0459	-0.0091	0.0368
039M	357804.8622	733566.7874	21.3836	-0.0458	-0.0146	0.0356
039R	357764.2284	733565.8498	15.3110	-0.0466	-0.0102	0.0360
040A	350939.1668	741111.9692	28.8243	0.0888	-0.0658	0.0083
040M	351050.6060	741097.1496	28.1481	0.0890	-0.0654	0.0091
040R	351156.7723	741075.5251	26.5994	0.0883	-0.0639	0.0094
051A	346082.8654	731673.6587	9.7035	0.0474	0.0137	-0.0385
051M	346209.4045	731848.1189	9.5150	0.0475	0.0129	-0.0360
051R	345970.6828	731512.3421	9.2304	0.0488	0.0151	-0.0416
INSU	382376.8767	705636.8853	40.9977	-0.0464	-0.0027	0.0097
TLCA	415728.9791	798803.3377	21.5959	0.0361	-0.0063	-0.0001

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 3, locațiile 23 – 40, 51.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 23 – 40, 51 (Lot 3)



Parametri de transformare pentru lot 3 locațiile 23 – 40, 51

Parametri de transformare pentru altimetrie (10 parametri):

p1 = -3441.663818359380000
p2 = -0.005771515774541
p3 = 0.016220666468144
p4 = -0.000000003603866
p5 = -0.000000040231875
p6 = 0.000000002773760
p7 = -0.000000000000001
p8 = 0.000000000000006
p9 = 0.000000000000024
p10 = -0.000000000000006
.....

Parametri de transformare pentru planimetrie (12 parametri):

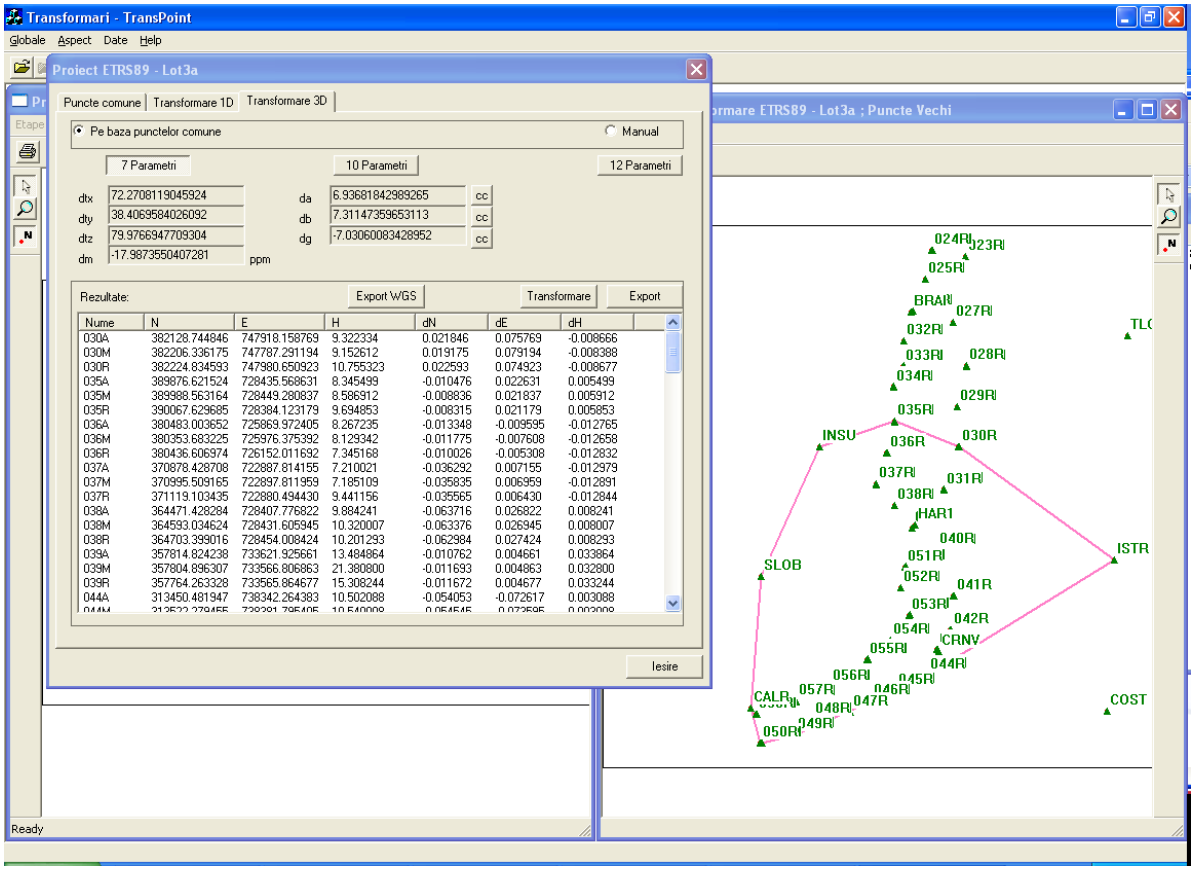
dtx = -1460.075462037689900
dty = 4549.412109375000000
dtz = -546.608993530272980
da = -162.194651383490000 cc
db = -26.965516757249802 cc
dg = 160.009610439743990 cc
dm = -431.672273407456940 ppm
e12 = -0.000180689597073
e13 = 0.000115344784717
e23 = -0.000234078096093
t12 = 0.000128886604898

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 3 locațiile 44, 45, 49 – 55, 58)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
030A	382128.7448	747918.1588	9.3223	0.0218	0.0758	-0.0087
030M	382206.3362	747787.2912	9.1526	0.0192	0.0792	-0.0084
030R	382224.8346	747980.6509	10.7553	0.0226	0.0749	-0.0087
035A	389876.6215	728435.5686	8.3455	-0.0105	0.0226	0.0055
035M	389988.5632	728449.2808	8.5869	-0.0088	0.0218	0.0059
035R	390067.6297	728384.1232	9.6949	-0.0083	0.0212	0.0059
036A	380483.0037	725869.9724	8.2672	-0.0133	-0.0096	-0.0128
036M	380353.6832	725976.3754	8.1293	-0.0118	-0.0076	-0.0127
036R	380436.6070	726152.0117	7.3452	-0.0100	-0.0053	-0.0128
037A	370878.4287	722887.8142	7.2100	-0.0363	0.0072	-0.0130
037M	370995.5092	722897.8120	7.1851	-0.0358	0.0070	-0.0129
037R	371119.1034	722880.4944	9.4412	-0.0356	0.0064	-0.0128
038A	364471.4283	728407.7768	9.8842	-0.0637	0.0268	0.0082
038M	364593.0346	728431.6059	10.3200	-0.0634	0.0269	0.0080
038R	364703.3990	728454.0084	10.2013	-0.0630	0.0274	0.0083
039A	357814.8242	733621.9257	13.4849	-0.0108	0.0047	0.0339
039M	357804.8963	733566.8069	21.3808	-0.0117	0.0049	0.0328
039R	357764.2633	733565.8647	15.3082	-0.0117	0.0047	0.0332
044A	313450.4819	738342.2644	10.5021	-0.0541	-0.0726	0.0031
044M	313522.2795	738381.7954	10.5400	-0.0545	-0.0736	0.0030
044R	313355.0495	738284.3170	10.6592	-0.0535	-0.0710	0.0022
045A	308828.9219	728836.7477	11.2761	0.0829	-0.0083	0.0071
045M	308804.5324	728781.4608	11.4874	0.0844	-0.0082	0.0074
045R	308778.9320	728732.0527	11.5375	0.0850	-0.0083	0.0075
049A	295499.9801	698319.2574	19.2822	0.0151	-0.0086	0.0282
049M	295444.4309	698329.7795	24.0607	0.0149	-0.0075	0.0277
049R	295348.3869	698343.7733	21.4970	0.0149	-0.0057	0.0270
050A	292813.6911	688129.7323	30.4067	-0.0769	0.0383	-0.0433
050M	292777.2282	688253.4095	29.9621	-0.0768	0.0385	-0.0429
050R	292925.3946	687868.8263	31.4114	-0.0774	0.0363	-0.0446
051A	346082.9170	731673.6339	9.7493	0.0990	-0.0111	0.0073
051M	346209.4561	731848.0948	9.5594	0.0991	-0.0112	0.0084
051R	345970.7344	731512.3163	9.2777	0.1004	-0.0107	0.0057
052A	339860.0126	730227.8401	21.4904	0.0596	0.0081	-0.0086
052M	339742.0139	730285.2778	19.7328	0.0589	0.0078	-0.0082
052R	339803.2229	730398.3341	19.8718	0.0599	0.0071	-0.0082
053A	331697.6620	732955.0171	10.0293	-0.0230	-0.0209	0.0013
053M	331560.2430	732925.2053	12.0494	-0.0230	-0.0207	0.0014
053R	331419.0944	732890.4889	10.0413	-0.0236	-0.0201	0.0013
054A	323986.0462	727267.8389	12.6968	-0.0048	0.0259	-0.0152
054M	323955.5450	727242.9837	13.4510	-0.0050	0.0257	-0.0150
054R	323841.2582	727200.9175	12.5435	-0.0048	0.0255	-0.0155
055A	318131.1869	720311.3307	11.9135	0.0999	-0.0433	-0.0135
055M	318085.7643	720216.2659	12.3151	0.1013	-0.0441	-0.0139
055R	318045.0505	720127.2073	12.4329	0.1025	-0.0447	-0.0141
058A	301495.6003	686644.5541	16.1279	-0.0377	-0.0209	0.0199
058M	301425.3464	686701.0439	15.2620	-0.0366	-0.0201	0.0190
058R	301547.8838	686603.7188	17.3225	-0.0372	-0.0212	0.0195

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 3, locațiile 44, 45, 49 – 55, 58.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 44, 45, 49 – 55, 58 (Lot 3)



Parametri de transformare pentru lot 3 locațiile 44, 45, 49 – 55, 58

Parametri de transformare pentru altimetrie (10 parametri):

p1 = -730.480621337890970
p2 = -0.002840683911927
p3 = 0.000761225412134
p4 = -0.000000000656099
p5 = -0.000000001129678
p6 = -0.000000003564057
p7 = 0.000000000000002
p8 = -0.000000000000002
p9 = 0.000000000000001
p10 = 0.000000000000001
.....

Parametri de transformare pentru planimetrie (7 parametri):

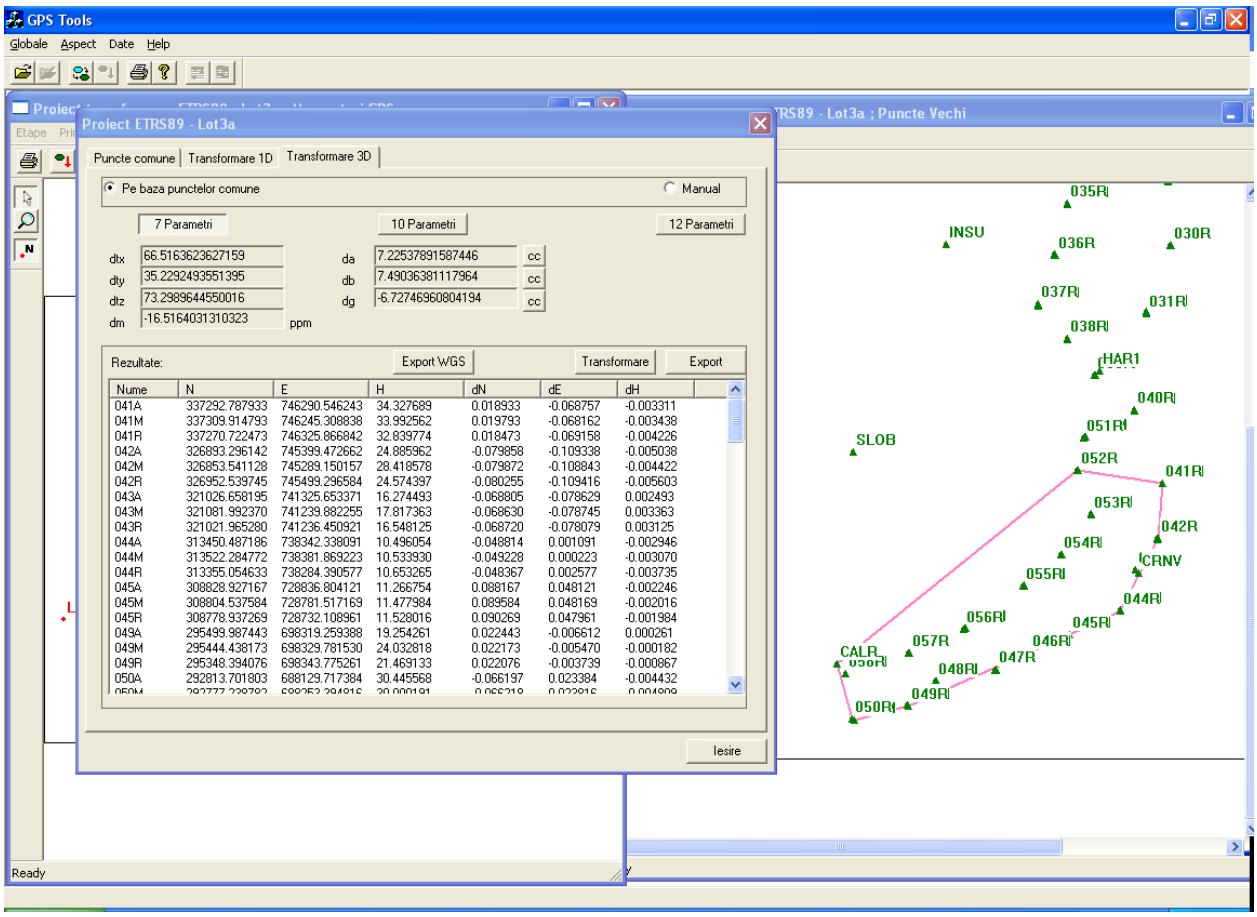
dtx = 72.270811904592406
dty = 38.406958402609199
dtz = 79.976694770930393
da = 6.936818429892649 cc
db = 7.311473596531129 cc
dg = -7.030600834289520 cc
dm = -17.987355040728097 ppm

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 3 locațiile 41 - 45, 49, 50, 52 – 54, 58)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
041A	337292.7879	746290.5462	34.3277	0.0189	-0.0688	-0.0033
041M	337309.9148	746245.3088	33.9926	0.0198	-0.0682	-0.0034
041R	337270.7225	746325.8668	32.8398	0.0185	-0.0692	-0.0042
042A	326893.2961	745399.4727	24.8860	-0.0799	-0.1093	-0.0050
042M	326853.5411	745289.1502	28.4186	-0.0799	-0.1088	-0.0044
042R	326952.5397	745499.2966	24.5744	-0.0803	-0.1094	-0.0056
043A	321026.6582	741325.6534	16.2745	-0.0688	-0.0786	0.0025
043M	321081.9924	741239.8823	17.8174	-0.0686	-0.0787	0.0034
043R	321021.9653	741236.4509	16.5481	-0.0687	-0.0781	0.0031
044A	313450.4872	738342.3381	10.4961	-0.0488	0.0011	-0.0029
044M	313522.2848	738381.8692	10.5339	-0.0492	0.0002	-0.0031
044R	313355.0546	738284.3906	10.6533	-0.0484	0.0026	-0.0037
045A	308828.9272	728836.8041	11.2668	0.0882	0.0481	-0.0022
045M	308804.5376	728781.5172	11.4780	0.0896	0.0482	-0.0020
045R	308778.9373	728732.1090	11.5280	0.0903	0.0480	-0.0020
049A	295499.9874	698319.2594	19.2543	0.0224	-0.0066	0.0003
049M	295444.4382	698329.7815	24.0328	0.0222	-0.0055	-0.0002
049R	295348.3941	698343.7753	21.4691	0.0221	-0.0037	-0.0009
050A	292813.7018	688129.7174	30.4456	-0.0662	0.0234	-0.0044
050M	292777.2388	688253.3948	30.0002	-0.0662	0.0238	-0.0048
050R	292925.4056	687868.8111	31.4516	-0.0664	0.0211	-0.0044
052A	339860.0625	730227.9207	21.4970	0.1095	0.0887	-0.0020
052M	339742.0636	730285.3584	19.7393	0.1086	0.0884	-0.0017
052R	339803.2726	730398.4149	19.8780	0.1096	0.0879	-0.0020
053A	331697.6979	732955.0959	10.0320	0.0129	0.0579	0.0040
053M	331560.2787	732925.2840	12.0523	0.0127	0.0580	0.0043
053R	331419.1299	732890.5674	10.0443	0.0119	0.0584	0.0043
054A	323986.0748	727267.9038	12.7060	0.0238	0.0908	-0.0060
054M	323955.5736	727243.0486	13.4601	0.0236	0.0906	-0.0059
054R	323841.2867	727200.9822	12.5525	0.0237	0.0902	-0.0065
058A	301495.6248	686644.5432	16.1086	-0.0132	-0.0318	0.0006
058M	301425.3708	686701.0331	15.2432	-0.0122	-0.0309	0.0002
058R	301547.9084	686603.7079	17.3029	-0.0126	-0.0321	-0.0001

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 3, locațiile 41 – 45, 49, 50, 52 – 54, 58.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 41 - 45, 49, 50, 52 – 54, 58 (Lot 3)



Parametri de transformare pentru lot 3 locațiile 44, 45, 49 – 55, 58

Parametri de transformare pentru altimetrie (10 parametri):

p1 = 784.704101562500000
p2 = 0.001705903559923
p3 = -0.003394383937120
p4 = -0.000000001379334
p5 = 0.000000011018429
p6 = 0.000000000167176
p7 = 0.000000000000003
p8 = -0.000000000000002
p9 = -0.000000000000007
p10 = 0.000000000000001
.....

Parametri de transformare pentru planimetrie (7 parametri):

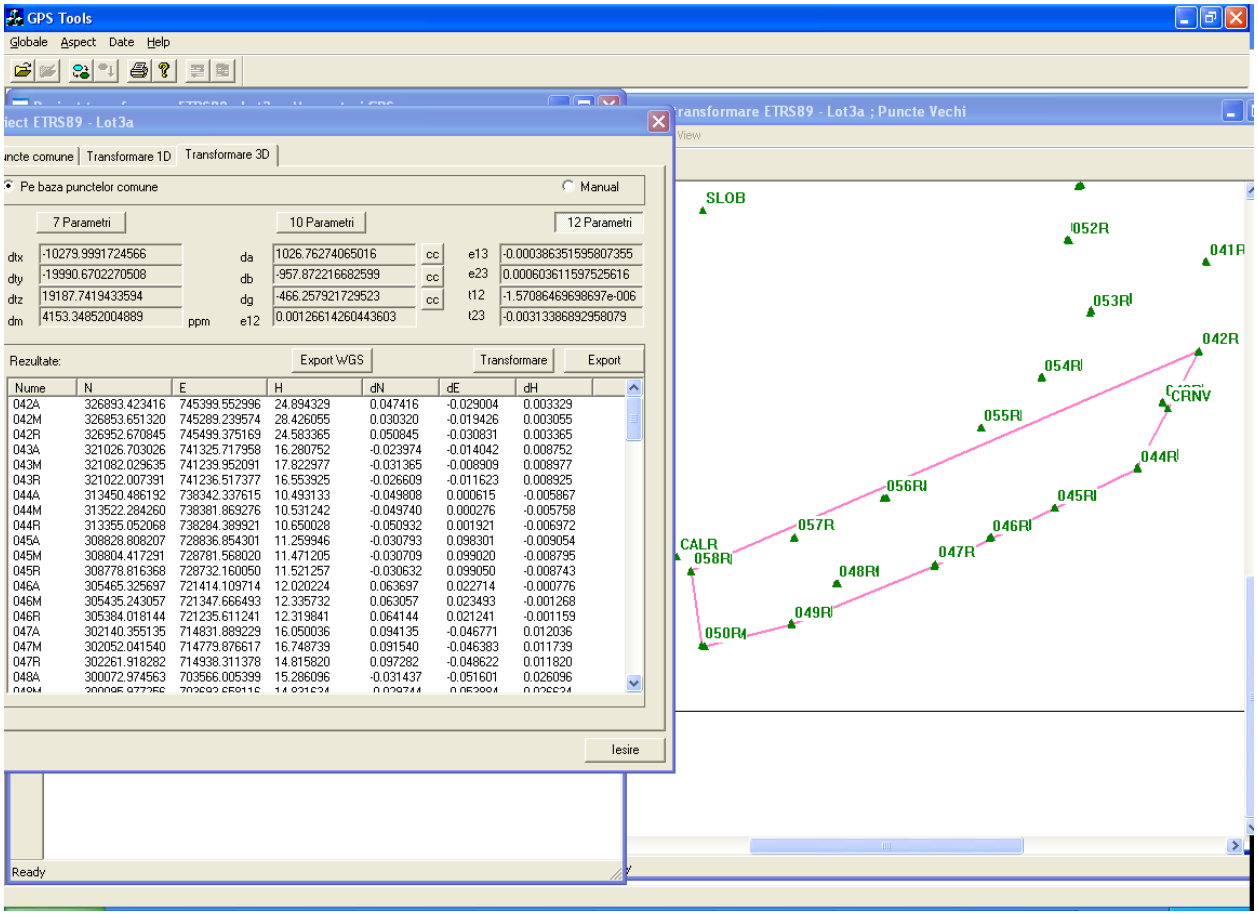
dtx = 66.516362362715896
dty = 35.229249355139501
dtz = 73.298964455001595
da = 7.225378915874460 cc
db = 7.490363811179640 cc
dg = -6.727469608041939 cc
dm = -16.516403131032298 ppm

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 3 locațiile 42 - 50, 56 – 58)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
042A	326893.4234	745399.5530	24.8943	0.0474	-0.0290	0.0033
042M	326853.6513	745289.2396	28.4261	0.0303	-0.0194	0.0031
042R	326952.6708	745499.3752	24.5834	0.0508	-0.0308	0.0034
043A	321026.7030	741325.7180	16.2808	-0.0240	-0.0140	0.0088
043M	321082.0296	741239.9521	17.8230	-0.0314	-0.0089	0.0090
043R	321022.0074	741236.5174	16.5539	-0.0266	-0.0116	0.0089
044A	313450.4862	738342.3376	10.4931	-0.0498	0.0006	-0.0059
044M	313522.2843	738381.8693	10.5312	-0.0497	0.0003	-0.0058
044R	313355.0521	738284.3899	10.6500	-0.0509	0.0019	-0.0070
045A	308828.8082	728836.8543	11.2599	-0.0308	0.0983	-0.0091
045M	308804.4173	728781.5680	11.4712	-0.0307	0.0990	-0.0088
045R	308778.8164	728732.1601	11.5213	-0.0306	0.0991	-0.0087
046A	305465.3257	721414.1097	12.0202	0.0637	0.0227	-0.0008
046M	305435.2431	721347.6665	12.3357	0.0631	0.0235	-0.0013
046R	305384.0181	721235.6112	12.3198	0.0641	0.0212	-0.0012
047A	302140.3551	714831.8892	16.0500	0.0941	-0.0468	0.0120
047M	302052.0415	714779.8766	16.7487	0.0915	-0.0464	0.0117
047R	302261.9183	714938.3114	14.8158	0.0973	-0.0486	0.0118
048A	300072.9746	703566.0054	15.2861	-0.0314	-0.0516	0.0261
048M	300095.9773	703693.6581	14.8316	-0.0297	-0.0539	0.0266
048R	300038.7027	703467.5563	14.9056	-0.0293	-0.0507	0.0266
049A	295499.9334	698319.2589	19.2596	-0.0316	-0.0071	0.0056
049M	295444.3650	698329.7903	24.0378	-0.0510	0.0033	0.0048
049R	295348.3324	698343.7766	21.4736	-0.0396	-0.0024	0.0036
050A	292813.7689	688129.6721	30.4285	0.0009	-0.0219	-0.0215
050M	292777.3061	688253.3482	29.9830	0.0011	-0.0228	-0.0220
050R	292925.4714	687868.7695	31.4349	-0.0006	-0.0205	-0.0211
056A	310023.3639	709292.3080	12.8889	-0.0091	-0.0130	-0.0261
056M	309970.6247	709111.8651	13.1016	-0.0113	-0.0129	-0.0254
056R	309916.5130	708889.5883	13.1312	-0.0120	-0.0147	-0.0258
057A	305368.0582	698570.3549	18.2051	-0.0548	0.0039	0.0051
057M	305333.7601	698489.9564	18.7730	-0.0569	0.0064	0.0050
057R	305399.6816	698649.4787	18.2546	-0.0554	0.0037	0.0046
058A	301495.6864	686644.6304	16.1200	0.0484	0.0554	0.0120
058M	301425.4355	686701.1174	15.2548	0.0525	0.0534	0.0118
058R	301547.9655	686603.7985	17.3141	0.0445	0.0585	0.0111

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 3, locațiile 42 – 50, 56 – 58.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 42 - 50, 56 – 58 (Lot 3)



Parametri de transformare pentru lot 3 locațiile 42 - 50, 56 – 58

Parametri de transformare pentru altimetrie (10 parametri):

p1 = -38.167140126228297
p2 = -0.000174017892050
p3 = 0.000271144541102
p4 = -0.000000000773982
p5 = 0.000000000331590
p6 = -0.000000000185944
.....

Parametri de transformare pentru planimetrie (12 parametri):

dtx = -10279.999172456601000
dty = -19990.670227050799000
dtz = 19187.741943359400000
da = 1026.762740650159900 cc
db = -957.872216682598950 cc
dg = -466.257921729522930 cc
dm = 4153.348520048890400 ppm
e12 = 0.001266142604436
e13 = -0.000386351595807
e23 = 0.000603611597526
t12 = -0.000001570864697
t21 = -0.003133868929581

Coordonate obținute prin TRANSDAT Stereo70 Lot 4
(locațiile 59 – 111)

Borna	Coordonate Stereo 70		
	X	Y	H
059A	295231.6680	682024.0680	15.5190
059M	295266.7650	682094.6110	16.6780
059R	295199.2780	681950.9390	15.8680
060A	296376.6290	670247.6250	18.3100
060M	296281.8220	670212.8410	19.9250
060R	296283.0220	670322.1520	19.6710
061A	296859.7400	663940.3460	18.5040
061M	296843.7930	663836.9610	18.2240
061R	296873.8190	664049.0340	17.1240
062A	295586.7430	657668.9650	19.5990
062M	295460.6220	657812.2320	19.5860
062R	295534.1610	657724.4900	19.4700
063A	293445.8560	648025.5790	15.8150
063M	293341.3670	647923.3520	15.4170
063R	293395.5040	647973.5420	15.2270
064A	288224.0710	638630.2760	19.9350
064M	288162.7170	638581.6240	20.2720
064R	288297.4790	638681.3690	18.7660
065A	286245.3330	631452.0070	20.2260
065M	286255.5390	631510.5580	20.4160
065R	286236.2740	631392.4910	20.4020
066A	285807.6210	623041.8390	15.2620
066M	285791.0140	622955.4250	16.3470
066R	285825.2850	623130.2340	15.5630
067A	283725.7320	613931.8640	17.8040
067M	283709.9360	614055.3820	17.7700
067R	283715.7110	614005.7170	17.4840
068A	282535.6100	605370.6610	18.3320
068M	282555.2730	605445.3360	18.5080
068R	282518.5860	605305.5720	18.1450
069A	279723.3360	599683.1320	18.5380
069M	279731.5910	599605.1030	17.8140
069R	279740.3100	599513.9730	17.4290
070A	276257.4710	589255.9490	18.7170
070M	276157.9050	589141.1320	18.8900
070R	276091.0200	589070.4790	18.2930
071A	272714.0720	586811.3730	23.1710
071M	272733.3230	586880.9670	22.6390
071R	272741.1560	586714.3730	21.4860
072A	263795.6080	577697.6090	21.5470
072M	263796.6420	577618.7900	21.0790
072R	263857.0180	577719.8180	20.9290

Borna	Coordonate Stereo 70		
	X	Y	H
073A	257196.9620	572261.5980	18.4300
073M	257133.3570	572201.2240	17.6270
073R	257075.7830	572149.4100	17.7490
074A	250201.8050	564537.3280	19.9110
074M	250311.6880	564631.7730	19.7880
074R	250400.3800	564710.9950	20.0660
075A	244542.7220	556879.7390	21.8900
075M	244534.4060	556805.0000	21.9250
075R	244531.0340	556715.2890	22.0510
076A	240498.9490	547016.0640	20.9660
076M	240456.5260	546943.2340	20.5860
076R	240412.1290	546868.7470	20.3340
077A	238244.5310	537054.7290	21.8370
077M	238197.8520	536956.0250	22.1890
077R	238143.5810	536865.0030	21.9230
078A	236744.7370	531196.5540	22.9310
078M	236807.4560	531093.3550	23.1110
078R	236854.4900	531021.5070	22.8870
079A	242137.0080	522550.8060	22.7280
079M	242189.0120	522459.4610	22.7410
079R	242239.2810	522373.0690	22.5130
080A	244730.2360	515630.8240	26.6500
080M	244667.1470	515584.0150	26.4840
080R	244618.6220	515541.8870	25.9970
081A	243799.8290	507345.4650	23.8800
081M	243867.6870	507260.2680	24.1250
081R	243937.8350	507189.7510	23.4500
082A	247813.9800	502014.8680	23.6950
082M	247861.2490	501885.3050	27.9580
082R	247874.0400	501982.8840	23.0830
083A	245953.0260	491250.9520	27.3600
083M	245911.7920	491194.1800	27.2820
083R	245974.2420	491170.9020	27.0770
084A	246551.1140	483223.3720	25.4820
084M	246468.0360	483243.6110	27.4410
084R	246421.9010	483167.8640	27.4400
085A	249923.0390	471564.2060	40.8060
085M	249961.6720	471502.3710	41.0630
085R	250007.8870	471427.7680	39.8180
086A	252516.5610	461277.5540	26.9640
086M	252525.2920	461145.4380	27.9570
086R	252515.2700	461429.5260	26.8610

Borna	Coordonate Stereo 70		
	X	Y	H
087A	248286.3440	451477.3160	24.5470
087M	248369.1080	451555.3650	24.8120
087R	248426.9150	451610.2030	25.0900
088A	245304.9100	442995.5260	26.5100
088M	245328.3220	443117.8340	27.1660
088R	245344.3990	443198.8370	26.4400
089A	244144.0700	432340.1790	26.5940
089M	244096.4670	432439.4810	26.4150
089R	244036.7270	432547.4050	25.9930
090A	249414.7340	421286.1090	27.7530
090M	249391.2740	421392.3410	27.9060
090R	249374.7010	421498.8990	27.6700
091A	250807.1930	416066.5280	27.8970
091M	250821.0030	415971.0520	28.2280
091R	250794.8040	416172.4240	27.6330
092A	252557.5660	407884.1360	28.6020
092M	252591.9880	407937.5790	31.5800
092R	252584.5720	407811.8210	28.6300
093A	257562.8900	397449.1230	27.2820
093M	257581.3610	397342.1090	27.2620
093R	257597.7670	397243.3000	26.7970
094A	257780.2840	385413.2030	30.2430
094M	257804.3300	385309.1830	30.9450
094R	257823.9740	385221.5230	30.6790
095A	261004.9080	380690.2190	30.6430
095M	260956.5410	380767.7920	31.1580
095R	260905.4780	380851.9150	31.3490
096A	263131.0350	370765.5120	30.6230
096M	263144.7420	370665.4910	30.9370
096R	263160.8600	370569.8660	30.6580
097A	263576.1270	362302.3480	31.1950
097M	263583.2310	362407.4630	31.1540
097R	263589.3410	362517.3420	31.3250
098A	258983.5600	349515.6880	31.2490
098M	259040.6660	349667.2480	31.4930
098R	259001.1740	349586.6820	30.9200
099A	259064.6410	339760.5140	35.3770
099M	258978.9370	339676.1990	34.5120
099R	259186.7160	339822.6570	34.0350
100A	261469.7580	332195.4640	34.2290
100M	261505.8130	332152.7290	37.1160
100R	261534.0800	332079.9740	36.9740

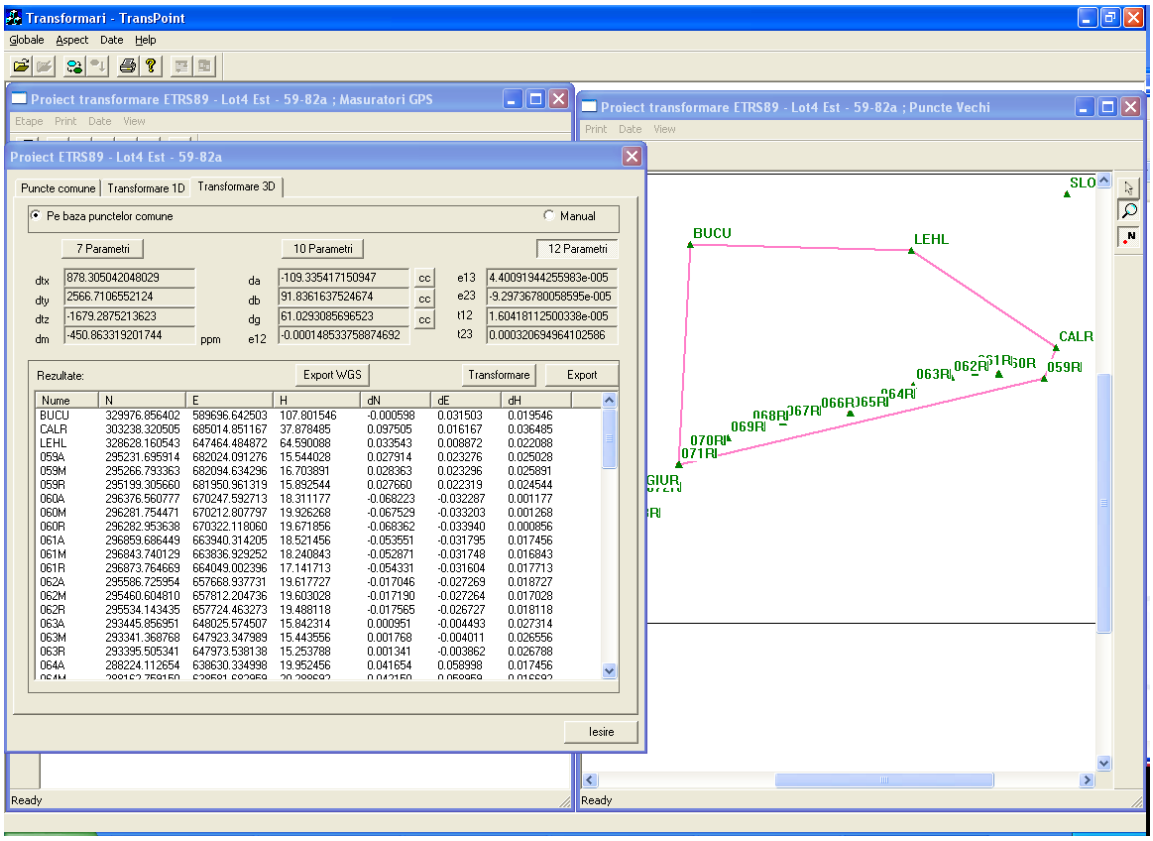
Borna	Coordonate Stereo 70		
	X	Y	H
101A	266192.2970	327522.3640	38.2990
101M	266203.7090	327465.0480	34.9400
101R	266293.3630	327479.0350	32.0160
102A	270798.2830	328380.2800	33.3310
102M	270890.0730	328437.1240	34.8270
102R	270708.6170	328325.4470	33.7490
103A	279666.1510	334332.2600	40.7010
103M	279680.1480	334372.5790	39.0730
103R	279692.6730	334412.4990	39.2260
104A	281111.1820	341135.3050	39.9380
104M	281188.6070	341226.4550	36.7100
104R	281261.9180	341296.3120	34.6200
105A	289323.2830	342817.6500	34.5790
105M	289403.5310	342768.1810	34.7320
105R	289486.3190	342757.6870	35.3050
106A	292602.1130	333806.0730	34.0310
106M	292796.0170	333575.6460	33.4640
106R	292685.2360	333705.5240	32.6090
107A	297208.8810	326630.4060	36.9220
107M	297196.8150	326682.3130	36.6630
107R	297230.4130	326537.8400	36.8860
108A	303176.9810	319771.4830	40.4130
108M	303205.1640	319676.0770	40.6790
108R	303229.8850	319591.0330	42.2940
109A	309709.4730	315752.8340	38.2340
109M	309716.2520	315650.9280	36.5800
109R	309788.7260	315717.2650	38.5400
110A	315023.4620	308081.2610	41.9950
110M	315143.7890	308022.3160	41.5320
110R	315229.0870	307960.1630	39.9860
111A	322265.5660	302006.8610	44.8010
111M	322365.8480	301972.0380	45.1650
111R	322436.2190	301950.4220	45.3150

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 59 - 71)

	Coordonate generate GPSTools			Diferenţe		
Borna	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
059A	295231.6959	682024.0913	15.5440	0.0279	0.0233	0.0250
059M	295266.7934	682094.6343	16.7039	0.0284	0.0233	0.0259
059R	295199.3057	681950.9613	15.8925	0.0277	0.0223	0.0245
060A	296376.5608	670247.5927	18.3112	-0.0682	-0.0323	0.0012
060M	296281.7545	670212.8078	19.9263	-0.0675	-0.0332	0.0013
060R	296282.9536	670322.1181	19.6719	-0.0684	-0.0339	0.0009
061A	296859.6864	663940.3142	18.5215	-0.0536	-0.0318	0.0175
061M	296843.7401	663836.9293	18.2408	-0.0529	-0.0317	0.0168
061R	296873.7647	664049.0024	17.1417	-0.0543	-0.0316	0.0177
062A	295586.7260	657668.9377	19.6177	-0.0170	-0.0273	0.0187
062M	295460.6048	657812.2047	19.6030	-0.0172	-0.0273	0.0170
062R	295534.1434	657724.4633	19.4881	-0.0176	-0.0267	0.0181
063A	293445.8570	648025.5745	15.8423	0.0010	-0.0045	0.0273
063M	293341.3688	647923.3480	15.4436	0.0018	-0.0040	0.0266
063R	293395.5053	647973.5381	15.2538	0.0013	-0.0039	0.0268
064A	288224.1127	638630.3350	19.9525	0.0417	0.0590	0.0175
064M	288162.7592	638581.6830	20.2887	0.0422	0.0590	0.0167
064R	288297.5198	638681.4279	18.7840	0.0408	0.0589	0.0180
065A	286245.4038	631452.0852	20.2474	0.0708	0.0782	0.0214
065M	286255.6095	631510.6364	20.4374	0.0705	0.0784	0.0214
065R	286236.3447	631392.5692	20.4234	0.0707	0.0782	0.0214
066A	285807.6677	623041.8862	15.2990	0.0467	0.0472	0.0370
066M	285791.0602	622955.4714	16.3838	0.0462	0.0464	0.0368
066R	285825.3319	623130.2819	15.5998	0.0469	0.0479	0.0368
067A	283725.6953	613931.8209	17.8199	-0.0367	-0.0431	0.0159
067M	283709.9007	614055.3404	17.7850	-0.0353	-0.0416	0.0150
067R	283715.6749	614005.6752	17.4996	-0.0361	-0.0418	0.0156
068A	282535.5242	605370.5621	18.3418	-0.0858	-0.0989	0.0098
068M	282555.1875	605445.2383	18.5178	-0.0855	-0.0977	0.0098
068R	282518.4997	605305.4736	18.1544	-0.0863	-0.0984	0.0094
069A	279723.3230	599683.0701	18.5256	-0.0130	-0.0619	-0.0124
069M	279731.5787	599605.0416	17.8029	-0.0123	-0.0614	-0.0111
069R	279740.2976	599513.9119	17.4180	-0.0124	-0.0611	-0.0110
070A	276257.5057	589255.9787	18.7601	0.0347	0.0297	0.0431
070M	276157.9386	589141.1631	18.9329	0.0336	0.0311	0.0429
070R	276091.0537	589070.5104	18.3354	0.0337	0.0314	0.0424
071A	272714.0780	586811.4157	23.1788	0.0060	0.0427	0.0078
071M	272733.3302	586881.0097	22.6460	0.0072	0.0427	0.0070
071R	272741.1610	586714.4157	21.4971	0.0050	0.0427	0.0111

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 59 – 71.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 59 - 71 (Lot 4)



Parametri de transformare pentru lot 4 locațiile 59 - 71

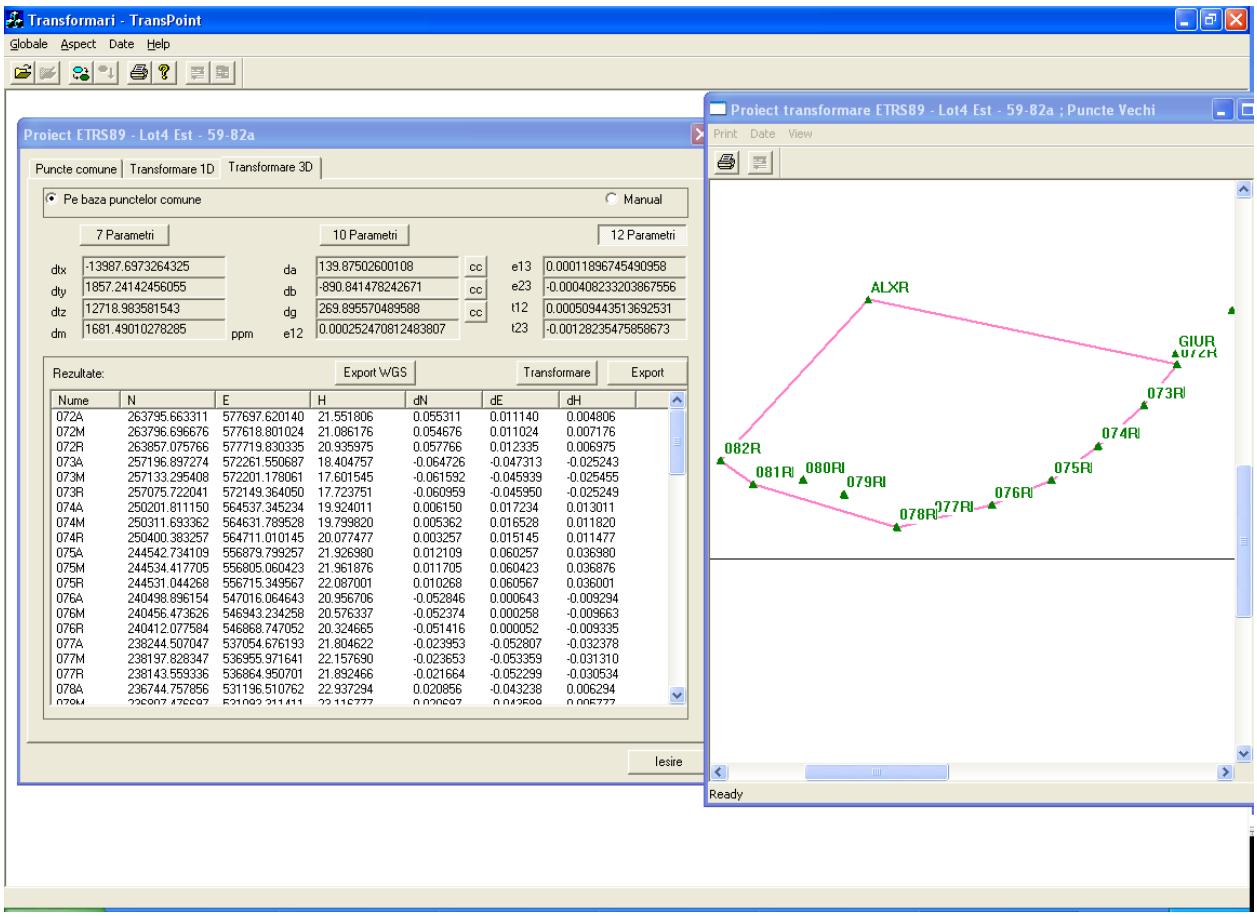
Parametri de transformare pentru altimetrie (10 parametri):
p1 = -343.248802185058990
p2 = -0.001318681985140
p3 = 0.001215394120663
p4 = -0.000000007091856
p5 = 0.000000003351140
p6 = -0.000000002901534
p7 = 0.000000000000005
p8 = 0.000000000000004
p9 = -0.000000000000005
p10 = 0.000000000000002
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = 878.305042048029010
dty = 2566.710655212400100
dtz = -1679.287521362299900
da = -109.335417150946980 cc
db = 91.836163752467399 cc
dg = 61.029308569652301 cc
dm = -450.863319201743930 ppm
e12 = -0.000148533758875
e13 = 0.000044009194426
e23 = -0.000092973678006
t12 = 0.000016041811250
t21 = 0.000320694964103

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 72 - 82)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
072A	263795.6633	577697.6201	21.5518	0.0553	0.0111	0.0048
072M	263796.6967	577618.8010	21.0862	0.0547	0.0110	0.0072
072R	263857.0758	577719.8303	20.9360	0.0578	0.0123	0.0070
073A	257196.8973	572261.5507	18.4048	-0.0647	-0.0473	-0.0252
073M	257133.2954	572201.1781	17.6015	-0.0616	-0.0459	-0.0255
073R	257075.7220	572149.3641	17.7238	-0.0610	-0.0460	-0.0252
074A	250201.8112	564537.3452	19.9240	0.0062	0.0172	0.0130
074M	250311.6934	564631.7895	19.7998	0.0054	0.0165	0.0118
074R	250400.3833	564711.0101	20.0775	0.0033	0.0151	0.0115
075A	244542.7341	556879.7993	21.9270	0.0121	0.0603	0.0370
075M	244534.4177	556805.0604	21.9619	0.0117	0.0604	0.0369
075R	244531.0443	556715.3496	22.0870	0.0103	0.0606	0.0360
076A	240498.8962	547016.0646	20.9567	-0.0528	0.0006	-0.0093
076M	240456.4736	546943.2343	20.5763	-0.0524	0.0003	-0.0097
076R	240412.0776	546868.7471	20.3247	-0.0514	0.0001	-0.0093
077A	238244.5070	537054.6762	21.8046	-0.0240	-0.0528	-0.0324
077M	238197.8283	536955.9716	22.1577	-0.0237	-0.0534	-0.0313
077R	238143.5593	536864.9507	21.8925	-0.0217	-0.0523	-0.0305
078A	236744.7579	531196.5108	22.9373	0.0209	-0.0432	0.0063
078M	236807.4767	531093.3114	23.1168	0.0207	-0.0436	0.0058
078R	236854.5115	531021.4650	22.8923	0.0215	-0.0420	0.0053
079A	242137.0463	522550.8316	22.7175	0.0383	0.0256	-0.0105
079M	242189.0507	522459.4865	22.7296	0.0387	0.0255	-0.0114
079R	242239.3207	522373.0958	22.5022	0.0397	0.0268	-0.0108
080A	244730.2777	515630.8686	26.6445	0.0417	0.0446	-0.0055
080M	244667.1890	515584.0593	26.4792	0.0420	0.0443	-0.0048
080R	244618.6654	515541.9305	25.9938	0.0434	0.0435	-0.0032
081A	243799.8530	507345.4549	23.9489	0.0240	-0.0101	0.0689
081M	243867.7094	507260.2563	24.1928	0.0224	-0.0117	0.0678
081R	243937.8582	507189.7394	23.5159	0.0232	-0.0116	0.0659
082A	247813.9190	502014.8659	23.6533	-0.0610	-0.0021	-0.0417
082M	247861.1762	501885.2991	27.9134	-0.0728	-0.0059	-0.0446
082R	247873.9805	501982.8831	23.0393	-0.0595	-0.0009	-0.0437
ALXR	274513.2264	526333.2695	75.5858	-0.0236	-0.0365	0.0118

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 72 – 82.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 72 - 82 (Lot 4)



Parametri de transformare pentru lot 3 locațiile 72 - 82

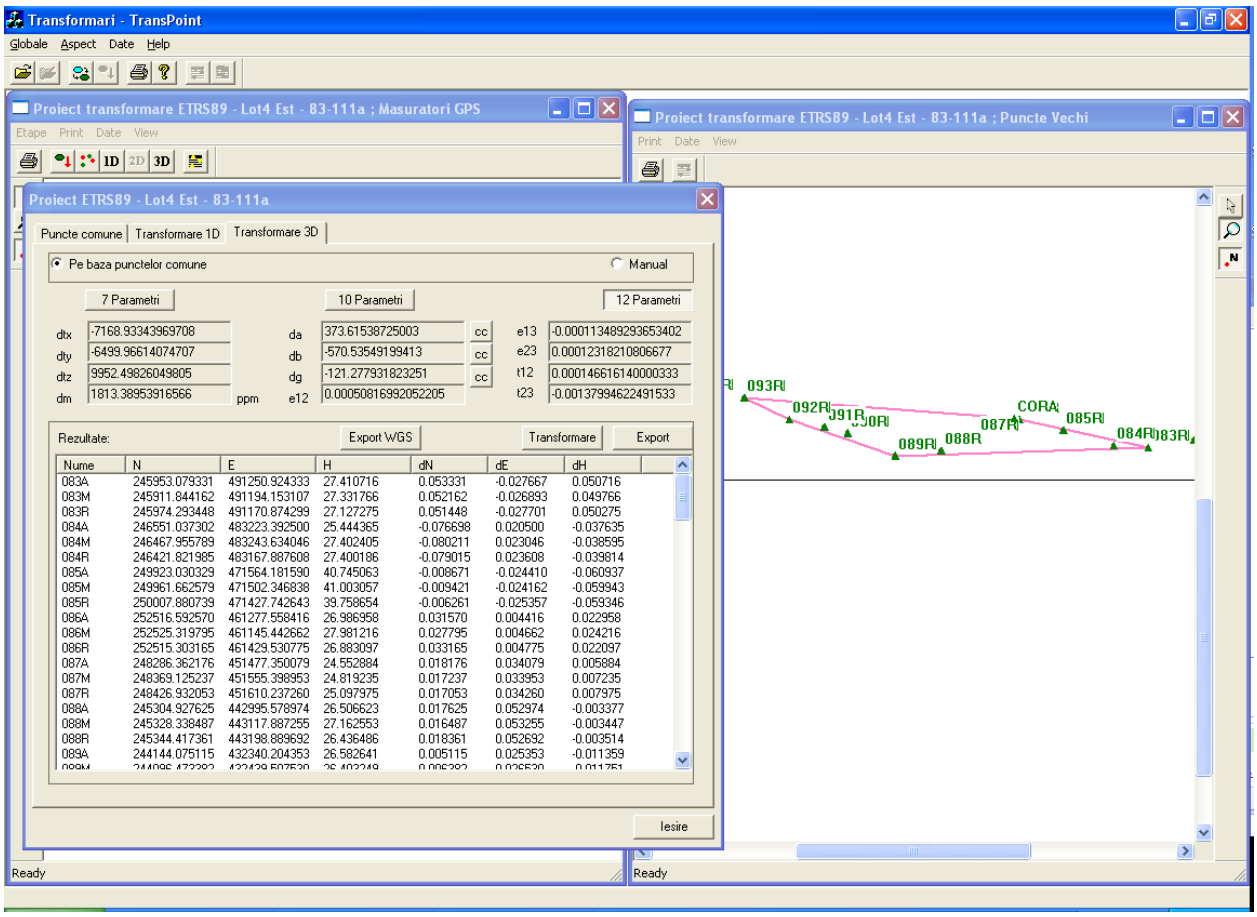
Parametri de transformare pentru altimetrie (6 parametri):
p1 = 177.231218516827000
p2 = -0.000069309770083
p3 = -0.001038247792962
p4 = 0.000000000928577
p5 = 0.000000001102878
p6 = -0.000000000315713
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = -13987.697326432501000
dty = 1857.241424560550100
dtz = 12718.983581543000000
da = 139.875026001079990 cc
db = -890.841478242670970 cc
dg = 269.895570489588010 cc
dm = 1681.490102782850000 ppm
e12 = 0.000252470812484
e13 = 0.000118967454910
e23 = -0.000408233203868
t12 = 0.000509443513693
t21 = -0.001282354758587

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 83 - 93)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
083A	245953.0793	491250.9243	27.4107	0.0533	-0.0277	0.0507
083M	245911.8442	491194.1531	27.3318	0.0522	-0.0269	0.0498
083R	245974.2934	491170.8743	27.1273	0.0514	-0.0277	0.0503
084A	246551.0373	483223.3925	25.4444	-0.0767	0.0205	-0.0376
084M	246467.9558	483243.6340	27.4024	-0.0802	0.0230	-0.0386
084R	246421.8220	483167.8876	27.4002	-0.0790	0.0236	-0.0398
085A	249923.0303	471564.1816	40.7451	-0.0087	-0.0244	-0.0609
085M	249961.6626	471502.3468	41.0031	-0.0094	-0.0242	-0.0599
085R	250007.8807	471427.7426	39.7587	-0.0063	-0.0254	-0.0593
086A	252516.5926	461277.5584	26.9870	0.0316	0.0044	0.0230
086M	252525.3198	461145.4427	27.9812	0.0278	0.0047	0.0242
086R	252515.3032	461429.5308	26.8831	0.0332	0.0048	0.0221
087A	248286.3622	451477.3501	24.5529	0.0182	0.0341	0.0059
087M	248369.1252	451555.3990	24.8192	0.0172	0.0340	0.0072
087R	248426.9321	451610.2373	25.0980	0.0171	0.0343	0.0080
088A	245304.9276	442995.5790	26.5066	0.0176	0.0530	-0.0034
088M	245328.3385	443117.8873	27.1626	0.0165	0.0533	-0.0034
088R	245344.4174	443198.8897	26.4365	0.0184	0.0527	-0.0035
089A	244144.0751	432340.2044	26.5826	0.0051	0.0254	-0.0114
089M	244096.4734	432439.5075	26.4032	0.0064	0.0265	-0.0118
089R	244036.7352	432547.4337	25.9803	0.0082	0.0287	-0.0127
090A	249414.7288	421286.0162	27.7959	-0.0052	-0.0928	0.0429
090M	249391.2676	421392.2489	27.9494	-0.0064	-0.0921	0.0434
090R	249374.6954	421498.8060	27.7136	-0.0056	-0.0931	0.0436
091A	250807.1883	416066.4643	27.9217	-0.0047	-0.0637	0.0247
091M	250820.9968	415970.9891	28.2509	-0.0062	-0.0629	0.0229
091R	250794.8007	416172.3594	27.6578	-0.0033	-0.0646	0.0248
092A	252557.5380	407884.1531	28.5521	-0.0280	0.0171	-0.0499
092M	252591.9551	407937.5966	31.5318	-0.0329	0.0176	-0.0482
092R	252584.5445	407811.8389	28.5791	-0.0276	0.0179	-0.0509
093A	257562.9058	397449.1699	27.2862	0.0158	0.0469	0.0042
093M	257581.3777	397342.1556	27.2654	0.0167	0.0466	0.0034
093R	257597.7861	397243.3471	26.7995	0.0191	0.0471	0.0025

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 83 – 93.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 83 - 93 (Lot 4)



Parametri de transformare pentru lot 4 locațiile 83 - 93

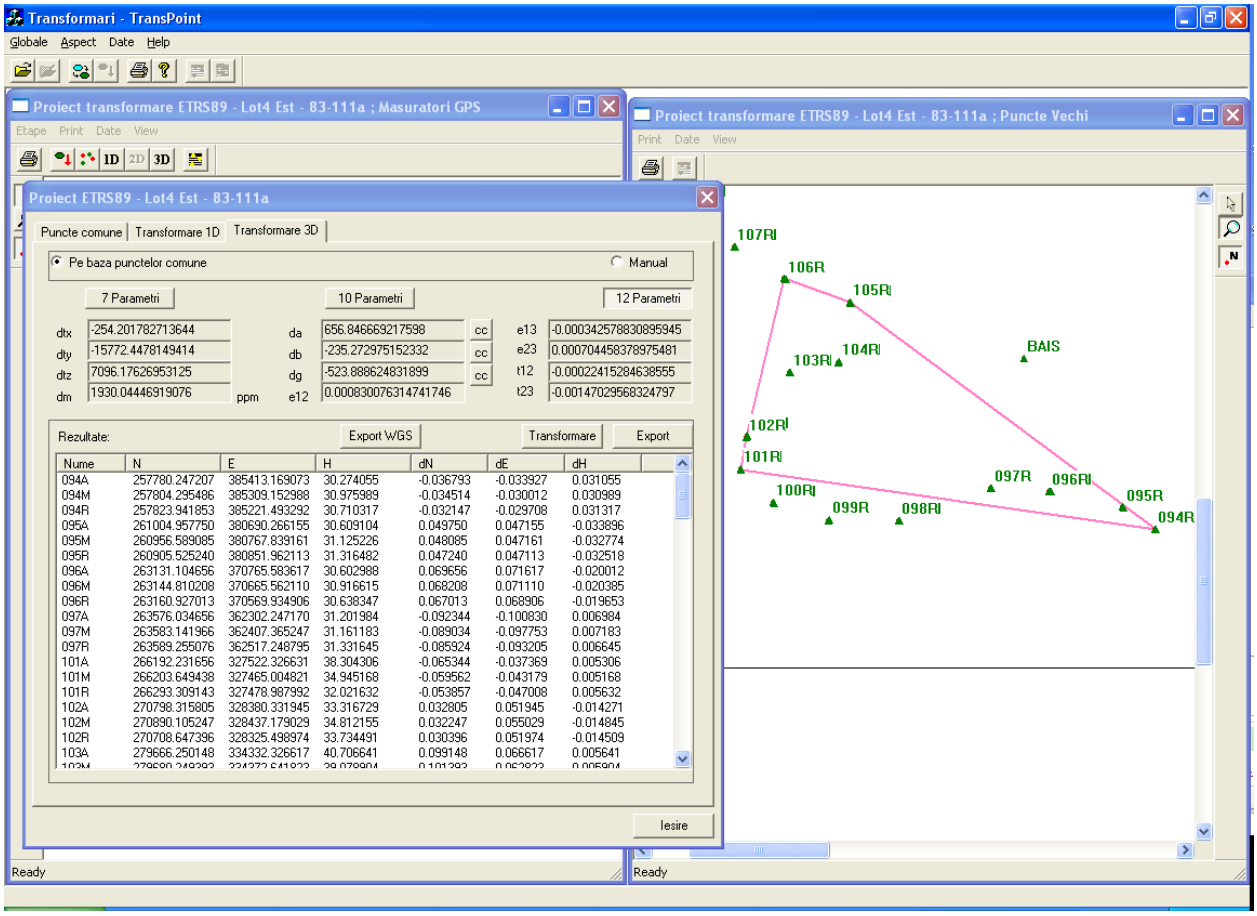
Parametri de transformare pentru altimetrie (6 parametri):
p1 = 10.735877871513400
p2 = -0.000129552580631
p3 = 0.000142867422255
p4 = 0.000000000295831
p5 = -0.000000000546023
p6 = 0.000000000032470
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = -7168.933439697079800
dty = -6499.966140747070300
dtz = 9952.498260498050500
da = 373.615387250029980 cc
db = -570.535491994129980 cc
dg = -121.277931823251000 cc
dm = 1813.389539165659900 ppm
e12 = 0.000508169920522
e13 = -0.000113489293653
e23 = 0.000123182108067
t12 = 0.000146616140000

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 94 – 97, 101 - 106)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
094A	257780.2472	385413.1691	30.2741	-0.0368	-0.0339	0.0311
094M	257804.2955	385309.1530	30.9760	-0.0345	-0.0300	0.0310
094R	257823.9419	385221.4933	30.7103	-0.0321	-0.0297	0.0313
095A	261004.9578	380690.2662	30.6091	0.0498	0.0472	-0.0339
095M	260956.5891	380767.8392	31.1252	0.0481	0.0472	-0.0328
095R	260905.5252	380851.9621	31.3165	0.0472	0.0471	-0.0325
096A	263131.1047	370765.5836	30.6030	0.0697	0.0716	-0.0200
096M	263144.8102	370665.5621	30.9166	0.0682	0.0711	-0.0204
096R	263160.9270	370569.9349	30.6383	0.0670	0.0689	-0.0197
097A	263576.0347	362302.2472	31.2020	-0.0923	-0.1008	0.0070
097M	263583.1420	362407.3652	31.1612	-0.0890	-0.0978	0.0072
097R	263589.2551	362517.2488	31.3316	-0.0859	-0.0932	0.0066
101A	266192.2317	327522.3266	38.3043	-0.0653	-0.0374	0.0053
101M	266203.6494	327465.0048	34.9452	-0.0596	-0.0432	0.0052
101R	266293.3091	327478.9880	32.0216	-0.0539	-0.0470	0.0056
102A	270798.3158	328380.3319	33.3167	0.0328	0.0519	-0.0143
102M	270890.1052	328437.1790	34.8122	0.0322	0.0550	-0.0148
102R	270708.6474	328325.4990	33.7345	0.0304	0.0520	-0.0145
103A	279666.2501	334332.3266	40.7066	0.0991	0.0666	0.0056
103M	279680.2494	334372.6418	39.0789	0.1014	0.0628	0.0059
103R	279692.7735	334412.5616	39.2314	0.1005	0.0626	0.0054
104A	281111.1949	341135.3009	39.9489	0.0129	-0.0041	0.0109
104M	281188.6218	341226.4439	36.7207	0.0148	-0.0111	0.0107
104R	281261.9334	341296.2958	34.6308	0.0154	-0.0163	0.0108
105A	289323.1977	342817.6477	34.5915	-0.0853	-0.0023	0.0125
105M	289403.4451	342768.1786	34.7449	-0.0859	-0.0024	0.0129
105R	289486.2302	342757.6852	35.3183	-0.0888	-0.0018	0.0133
106A	292602.1202	333806.0438	34.0126	0.0072	-0.0292	-0.0184
106M	292796.0282	333575.6137	33.4433	0.0112	-0.0323	-0.0207
106R	292685.2466	333705.4913	32.5890	0.0106	-0.0327	-0.0200

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 94 – 97, 101 - 106.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 94 – 97, 101 - 106 (Lot 4)



Parametri de transformare pentru lot 4 locațiile 94 – 97, 101 - 106

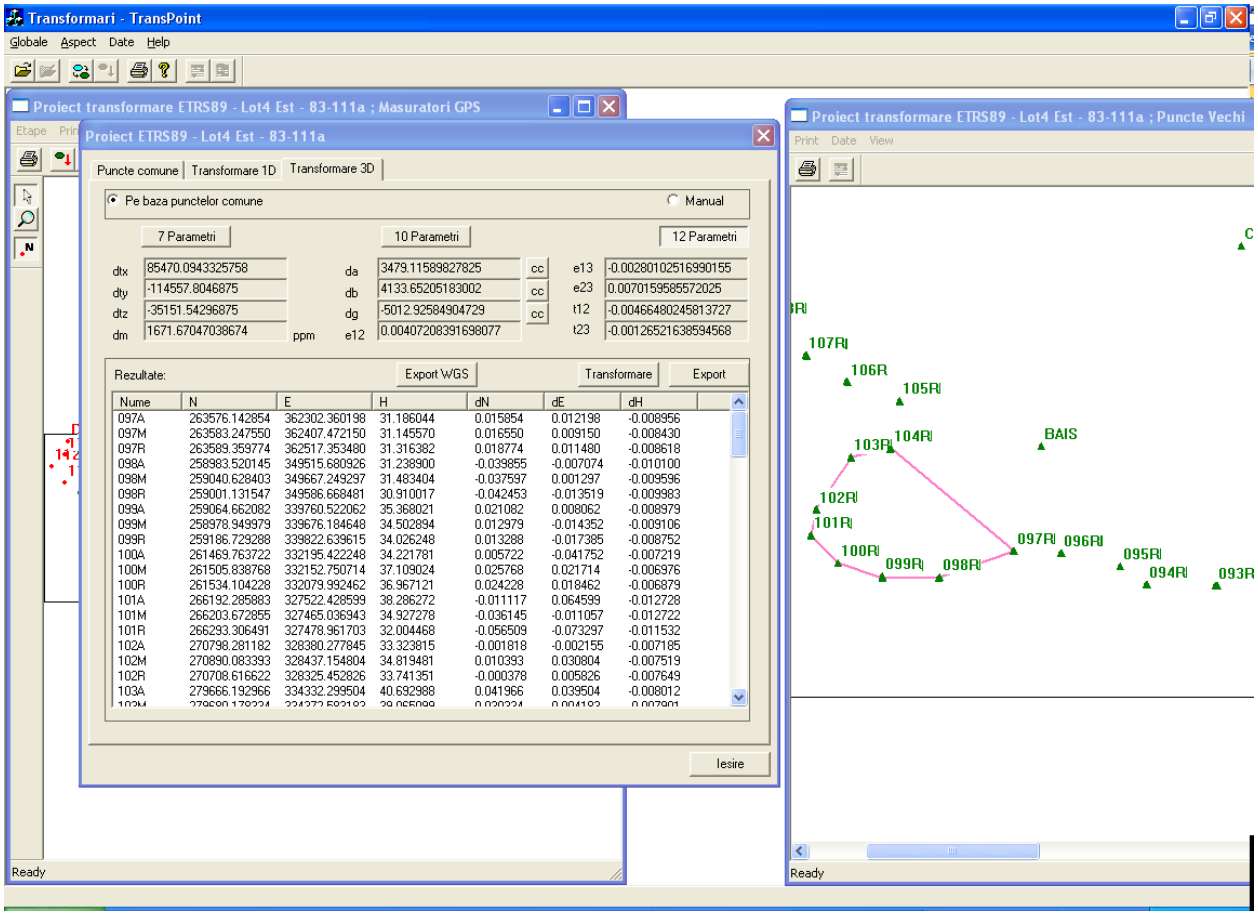
Parametri de transformare pentru altimetrie (6 parametri):
p1 = -21.893741607666001
p2 = -0.000464947782348
p3 = 0.000032352218767
p4 = 0.000000000110008
p5 = -0.000000000283049
p6 = -0.000000000517792
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = -254.201782713644010
dty = -15772.447814941401000
dtz = 7096.176269531250000
da = 656.846669217597880 cc
db = -235.272975152332010 cc
dg = -523.888624831899050 cc
dm = 1930.044469190759900 ppm
e12 = 0.000830076314742
e13 = -0.000342578830896
e23 = 0.000704458378975
t12 = -0.000224152846386
t21 = -0.001470295683248

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 97 - 104)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
097A	263576.1429	362302.3602	31.1860	0.0159	0.0122	-0.0090
097M	263583.2476	362407.4722	31.1456	0.0166	0.0092	-0.0084
097R	263589.3598	362517.3535	31.3164	0.0188	0.0115	-0.0086
098A	258983.5201	349515.6809	31.2389	-0.0399	-0.0071	-0.0101
098M	259040.6284	349667.2493	31.4834	-0.0376	0.0013	-0.0096
098R	259001.1315	349586.6685	30.9100	-0.0425	-0.0135	-0.0100
099A	259064.6621	339760.5221	35.3680	0.0211	0.0081	-0.0090
099M	258978.9500	339676.1846	34.5029	0.0130	-0.0144	-0.0091
099R	259186.7293	339822.6396	34.0262	0.0133	-0.0174	-0.0088
100A	261469.7637	332195.4222	34.2218	0.0057	-0.0418	-0.0072
100M	261505.8388	332152.7507	37.1090	0.0258	0.0217	-0.0070
100R	261534.1042	332079.9925	36.9671	0.0242	0.0185	-0.0069
101A	266192.2859	327522.4286	38.2863	-0.0111	0.0646	-0.0127
101M	266203.6729	327465.0369	34.9273	-0.0361	-0.0111	-0.0127
101R	266293.3065	327478.9617	32.0045	-0.0565	-0.0733	-0.0115
102A	270798.2812	328380.2778	33.3238	-0.0018	-0.0022	-0.0072
102M	270890.0834	328437.1548	34.8195	0.0104	0.0308	-0.0075
102R	270708.6166	328325.4528	33.7414	-0.0004	0.0058	-0.0076
103A	279666.1930	334332.2995	40.6930	0.0420	0.0395	-0.0080
103M	279680.1783	334372.5832	39.0651	0.0303	0.0042	-0.0079
103R	279692.7041	334412.5067	39.2175	0.0311	0.0077	-0.0085
104A	281111.1704	341135.3468	39.9288	-0.0116	0.0418	-0.0092
104M	281188.5675	341226.4226	36.6998	-0.0395	-0.0324	-0.0102
104R	281261.8591	341296.2296	34.6092	-0.0589	-0.0824	-0.0108

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 97 – 104.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 97 - 104 (Lot 4)



Parametri de transformare pentru lot 4 locațiile 97 - 104

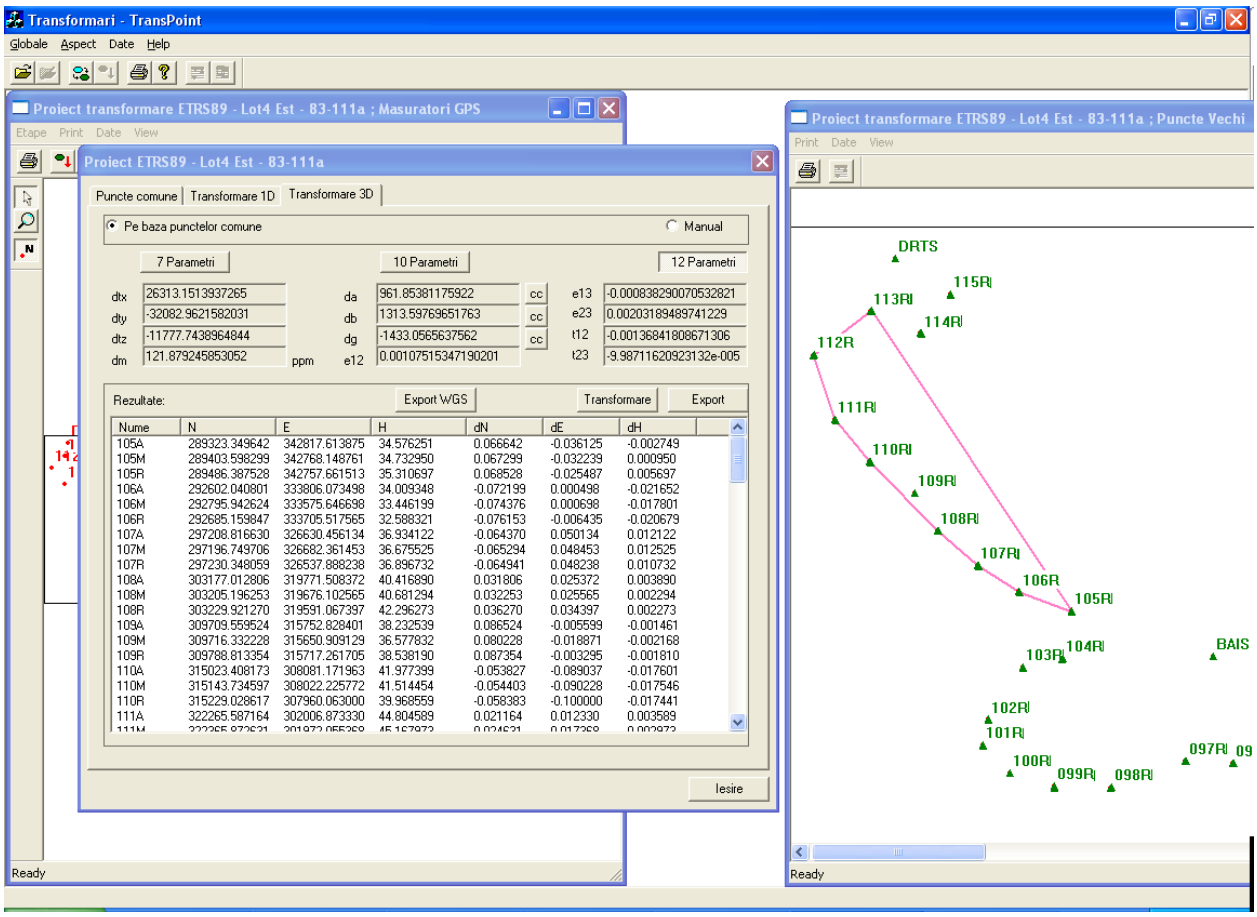
Parametri de transformare pentru altimetrie (6 parametri):
p1 = -56.886862277984598
p2 = -0.000420291822593
p3 = 0.000342899806128
p4 = -0.000000000482718
p5 = -0.000000000242519
p6 = -0.000000000467368
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = 85470.094332575798000
dty = -114557.804687500000000
dtz = -35151.542968750000000
da = 3479.115898278249500 cc
db = 4133.652051830020400 cc
dg = -5012.925849047290300 cc
dm = 1671.670470386739900 ppm
e12 = 0.004072083916981
e13 = -0.002801025169902
e23 = 0.007015958557203
t12 = -0.004664802458137
t21 = -0.001265216385946

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 4 locațiile 105 - 111, Lot 5 locațiile 112, 113)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
105A	289323.3496	342817.6139	34.5763	0.0666	-0.0361	-0.0027
105M	289403.5983	342768.1488	34.7330	0.0673	-0.0322	0.0010
105R	289486.3875	342757.6615	35.3107	0.0685	-0.0255	0.0057
106A	292602.0408	333806.0735	34.0093	-0.0722	0.0005	-0.0217
106M	292795.9426	333575.6467	33.4462	-0.0744	0.0007	-0.0178
106R	292685.1598	333705.5176	32.5883	-0.0762	-0.0064	-0.0207
107A	297208.8166	326630.4561	36.9341	-0.0644	0.0501	0.0121
107M	297196.7497	326682.3615	36.6755	-0.0653	0.0485	0.0125
107R	297230.3481	326537.8882	36.8967	-0.0649	0.0482	0.0107
108A	303177.0128	319771.5084	40.4169	0.0318	0.0254	0.0039
108M	303205.1963	319676.1026	40.6813	0.0323	0.0256	0.0023
108R	303229.9213	319591.0674	42.2963	0.0363	0.0344	0.0023
109A	309709.5595	315752.8284	38.2325	0.0865	-0.0056	-0.0015
109M	309716.3322	315650.9091	36.5778	0.0802	-0.0189	-0.0022
109R	309788.8134	315717.2617	38.5382	0.0874	-0.0033	-0.0018
110A	315023.4082	308081.1720	41.9774	-0.0538	-0.0890	-0.0176
110M	315143.7346	308022.2258	41.5145	-0.0544	-0.0902	-0.0175
110R	315229.0286	307960.0630	39.9686	-0.0584	-0.1000	-0.0174
111A	322265.5872	302006.8733	44.8046	0.0212	0.0123	0.0036
111M	322365.8726	301972.0554	45.1680	0.0246	0.0174	0.0030
111R	322436.2454	301950.4419	45.3183	0.0264	0.0199	0.0033
112A	333410.4822	298192.9494	41.9284	0.0072	0.0024	-0.0006
112M	333501.4061	298255.1118	45.3150	0.0131	0.0238	-0.0020
112R	333575.4601	298289.1020	45.4465	0.0121	0.0240	-0.0025
113A	341203.5641	308254.3134	43.9766	-0.0219	0.0004	-0.0024
113M	341163.2587	308181.0716	44.1663	-0.0233	-0.0004	-0.0037
113R	341121.6403	308121.4620	43.9990	-0.0257	-0.0030	-0.0040

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 59 – 71.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 105 - 111 (Lot 4), 112, 113 (Lot 5)



Parametri de transformare pentru lot 4 locațiile 105 – 111, lot 5 locațiile 112, 113

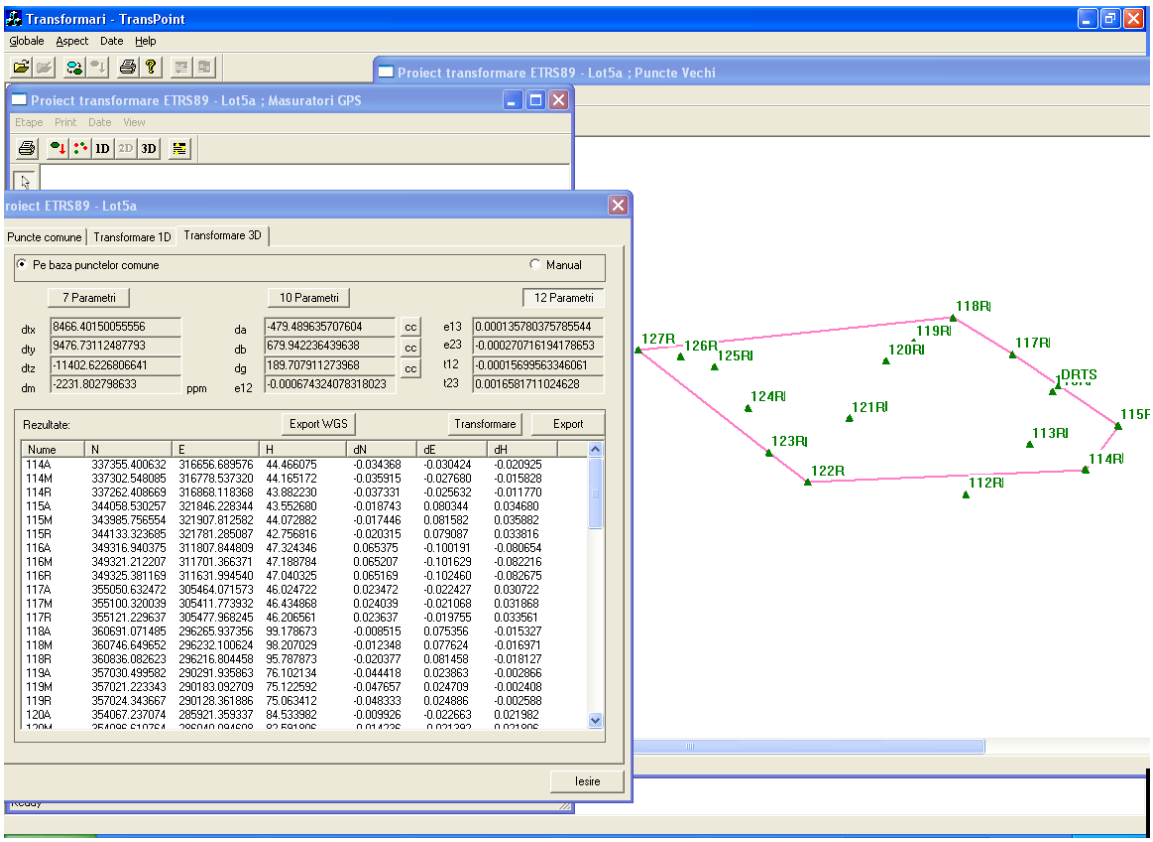
Parametri de transformare pentru altimetrie (6 parametri):
p1 = 226.765822887421000
p2 = 0.000662478836603
p3 = -0.000434952344222
p4 = 0.000000000154348
p5 = 0.000000001168206
p6 = 0.000000000549019
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = 26313.151393726501000
dty = -32082.962158203100000
dtz = -11777.743896484400000
da = 961.853811759219870 cc
db = 1313.597696517630100 cc
dg = -1433.056563756199900 cc
dm = 121.879245853051980 ppm
e12 = 0.001075153471902
e13 = -0.000838290070533
e23 = 0.002031894897412
t12 = -0.001368418086713
t21 = -0.000099871162092

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 5 locațiile 114 – 127)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
114A	337355.4006	316656.6896	44.4661	-0.0344	-0.0304	-0.0209
114M	337302.5481	316778.5373	44.1652	-0.0359	-0.0277	-0.0158
114R	337262.4087	316868.1184	43.8822	-0.0373	-0.0256	-0.0118
115A	344058.5303	321846.2283	43.5527	-0.0187	0.0803	0.0347
115M	343985.7566	321907.8126	44.0729	-0.0174	0.0816	0.0359
115R	344133.3237	321781.2851	42.7568	-0.0203	0.0791	0.0338
116A	349316.9404	311807.8448	47.3243	0.0654	-0.1002	-0.0807
116M	349321.2122	311701.3664	47.1888	0.0652	-0.1016	-0.0822
116R	349325.3812	311631.9945	47.0403	0.0652	-0.1025	-0.0827
117A	355050.6325	305464.0716	46.0247	0.0235	-0.0224	0.0307
117M	355100.3200	305411.7739	46.4349	0.0240	-0.0211	0.0319
117R	355121.2296	305477.9682	46.2066	0.0236	-0.0198	0.0336
118A	360691.0715	296265.9374	99.1787	-0.0085	0.0754	-0.0153
118M	360746.6497	296232.1006	98.2070	-0.0123	0.0776	-0.0170
118R	360836.0826	296216.8045	95.7879	-0.0204	0.0815	-0.0181
119A	357030.4996	290291.9359	76.1021	-0.0444	0.0239	-0.0029
119M	357021.2233	290183.0927	75.1226	-0.0477	0.0247	-0.0024
119R	357024.3437	290128.3619	75.0634	-0.0483	0.0249	-0.0026
120A	354067.2371	285921.3593	84.5340	-0.0099	-0.0227	0.0220
120M	354096.6108	286040.0946	82.5918	-0.0142	-0.0214	0.0218
120R	354087.1139	285804.0025	79.5331	-0.0241	-0.0175	0.0241
121A	345274.7090	280242.0952	75.4410	0.0630	-0.0458	0.0130
121M	345290.2092	280351.8390	76.6698	0.0672	-0.0470	0.0118
121R	345255.8253	280080.4934	76.6917	0.0643	-0.0466	0.0137
122A	335352.7806	273763.8488	78.5971	0.0326	0.1078	0.0051
122M	335367.7447	273659.4825	78.0837	0.0287	0.1065	0.0047
122R	335319.9603	273842.1454	78.9286	0.0353	0.1094	0.0066
123A	339898.3070	267783.9656	83.8581	-0.0440	-0.0224	-0.0289
123M	339786.1395	267852.6730	86.9400	-0.0365	-0.0230	-0.0290
123R	340039.6918	267726.8395	81.3869	-0.0502	-0.0225	-0.0281
124A	346784.2058	264592.7445	74.6137	-0.0402	-0.0765	0.0217
124M	346887.7516	264573.2996	75.7642	-0.0364	-0.0764	0.0222
124R	346947.2292	264578.6717	76.1952	-0.0348	-0.0763	0.0232
125A	353133.7367	259490.5183	70.1879	0.0107	-0.0087	-0.0251
125M	353147.1807	259432.1636	71.3257	0.0137	-0.0094	-0.0263
125R	353178.0245	259366.3289	71.8353	0.0155	-0.0091	-0.0277
126A	354770.3436	254116.2293	71.3072	0.0296	0.0163	-0.0618
126M	354791.4168	254019.6976	71.2753	0.0298	0.0166	-0.0607
126R	354751.3464	254211.6138	71.3280	0.0294	0.0158	-0.0620
127A	355711.6599	247622.3956	72.0584	-0.0111	0.0136	0.0394
127M	355696.4848	247481.0466	71.6906	-0.0132	0.0136	0.0446
127R	355742.2319	247699.3979	72.1351	-0.0101	0.0139	0.0361

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 114 – 127.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locațiilor 114 - 127 (Lot 5)



Parametri de transformare pentru lot 5 locațiile 114 – 127

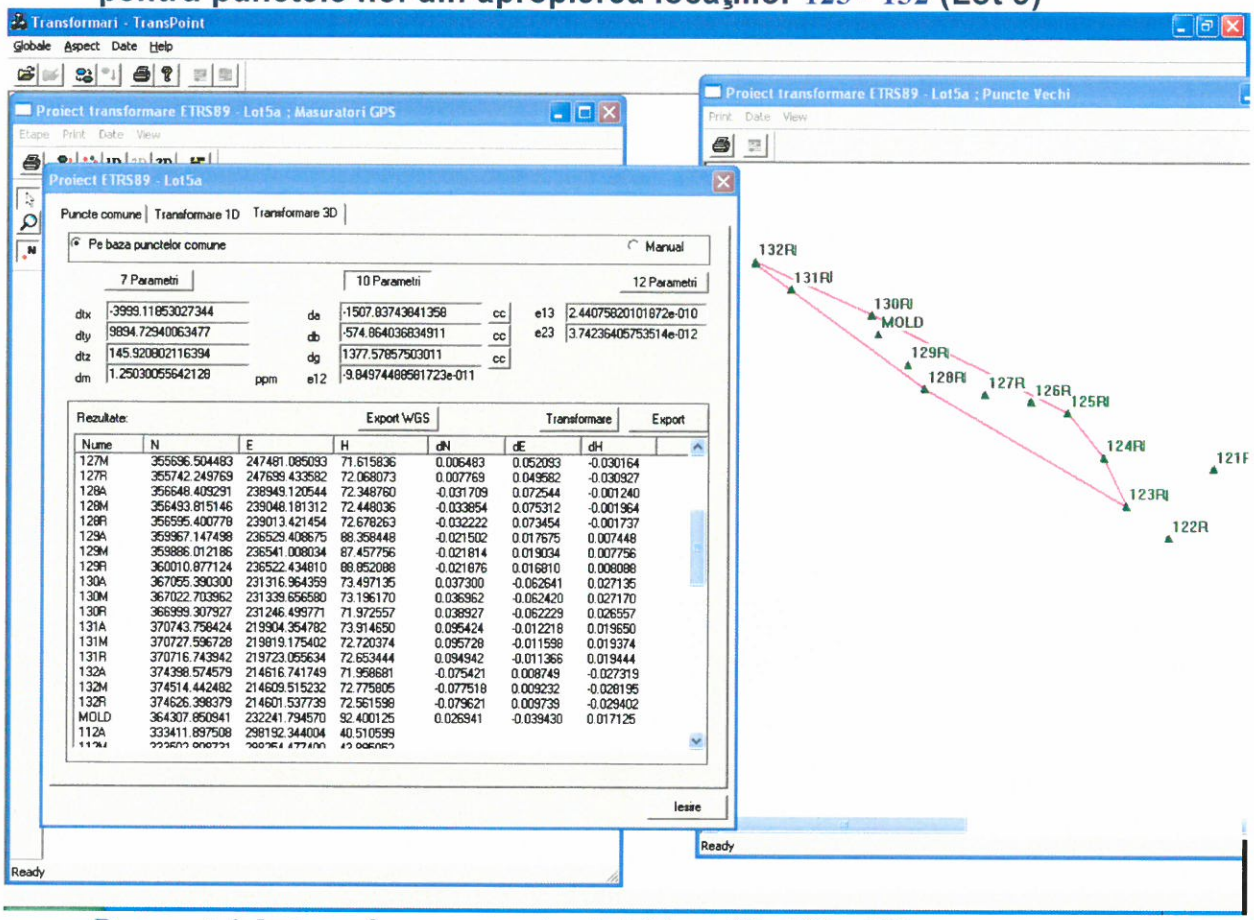
Parametri de transformare pentru altimetrie (10 parametri):
p1 = 2986.125484466550000
p2 = -0.003406060190173
p3 = -0.027941670356086
p4 = 0.000000092110766
p5 = -0.000000028017560
p6 = 0.000000004262766
p7 = -0.000000000000099
p8 = 0.000000000000036
p9 = 0.000000000000006
p10 = -0.000000000000006
.....
Parametri de transformare pentru planimetrie (12 parametri):
dtx = 8466.401500555559300
dty = 9476.731124877929700
dtz = -11402.622680664101000
da = -479.489635707603950 cc
db = 679.942236439638010 cc
dg = 189.707911273967990 cc
dm = -2231.802798632999800 ppm
e12 = -0.000674324078318
e13 = 0.000135780375786
e23 = -0.000270716194179
t12 = -0.000156995633461
t21 = 0.001658171102463

Coordonate Stereo70 obținute prin utilizarea parametrilor de transformare calculați cu GPSTools şi diferențele față de coordonatele Stereo70 obținute prin Transdat (Lot 5 locațiile 123 - 132)

Borna	Coordonate generate GPSTools			Diferenţe		
	Xg	Yg	Hg	Xg - X	Yg - Y	Hg - H
123A	339898.3523	267784.0713	83.8845	0.0013	0.0833	-0.0025
123M	339786.1786	267852.7828	86.9657	0.0026	0.0868	-0.0033
123R	340039.7416	267726.9407	81.4134	-0.0004	0.0787	-0.0016
124A	346784.2065	264592.7296	74.6154	-0.0395	-0.0914	0.0234
124M	346887.7489	264573.2833	75.7651	-0.0391	-0.0927	0.0231
124R	346947.2252	264578.6542	76.1955	-0.0388	-0.0938	0.0235
125A	353133.7238	259490.4460	70.2201	-0.0022	-0.0810	0.0071
125M	353147.1649	259432.0929	71.3580	-0.0021	-0.0801	0.0060
125R	353178.0073	259366.2591	71.8681	-0.0017	-0.0789	0.0051
126A	354770.3353	254116.2074	71.3387	0.0213	-0.0056	-0.0303
126M	354791.4089	254019.6765	71.3062	0.0219	-0.0045	-0.0298
126R	354751.3378	254211.5909	71.3603	0.0208	-0.0071	-0.0297
127A	355711.6781	247622.4326	71.9882	0.0071	0.0506	-0.0308
127M	355696.5045	247481.0851	71.6158	0.0065	0.0521	-0.0302
127R	355742.2498	247699.4336	72.0681	0.0078	0.0496	-0.0309
128A	356648.4093	238949.1205	72.3488	-0.0317	0.0725	-0.0012
128M	356493.8151	239048.1813	72.4480	-0.0339	0.0753	-0.0020
128R	356595.4008	239013.4215	72.6783	-0.0322	0.0735	-0.0017
129A	359967.1475	236529.4087	88.3584	-0.0215	0.0177	0.0074
129M	359886.0122	236541.0080	87.4578	-0.0218	0.0190	0.0078
129R	360010.8771	236522.4348	88.8521	-0.0219	0.0168	0.0081
130A	367055.3903	231316.9644	73.4971	0.0373	-0.0626	0.0271
130M	367022.7040	231339.6566	73.1962	0.0370	-0.0624	0.0272
130R	366999.3079	231246.4998	71.9726	0.0389	-0.0622	0.0266
131A	370743.7584	219904.3548	73.9147	0.0954	-0.0122	0.0197
131M	370727.5967	219819.1754	72.7204	0.0957	-0.0116	0.0194
131R	370716.7439	219723.0556	72.6534	0.0949	-0.0114	0.0194
132A	374398.5746	214616.7417	71.9587	-0.0754	0.0087	-0.0273
132M	374514.4425	214609.5152	72.7758	-0.0775	0.0092	-0.0282
132R	374626.3984	214601.5377	72.5616	-0.0796	0.0097	-0.0294

Diferențele obținute se încadrează în precizia cerută de 10cm pe cele trei axe pentru toate punctele din lot 4, locațiile 123 – 132.

Regiunea de aplicare a parametrilor de transformare pentru punctele noi din apropierea locaţiilor 123 - 132 (Lot 5)



Parametri de transformare pentru lot 5 locaţiile 123 - 132

Parametri de transformare pentru altimetrie (6 parametri):

p1 = 163.898281097412000
p2 = 0.000364025043382
p3 = -0.000300777901430
p4 = 0.000000000205310
p5 = 0.000000000629054
p6 = 0.000000000275187

.....

Parametri de transformare pentru planimetrie (10 parametri):

dtx = -3999.118530273439800
dty = 9894.729400634769300
dtz = 145.920802116393990
da = -1507.837438413579800 cc
db = -574.864036834910960 cc
dg = 1377.578575030110000 cc
dm = 1.250300556421280 ppm
e12 = -0.000000000098497
e13 = 0.000000000244076
e23 = 0.000000000003742

EXECUTANT,
SC TEHNOGIS GRUP SRL

ANEXA 1

REZULTATELE TRANSFORMĂRII CU GPSTOOLS

Fisier WGS:
C:\Documents and Settings\All Users\Documents\Bornare\ParametriSt70\ETRS89 - Lot1a.txt
Fisier Puncte Comune:
C:\Documents and Settings\All Users\Documents\Bornare\ParametriSt70\ST70 TRANSDAT - Lot1a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 110.986804485321000
p2 = 0.000204271973416
p3 = 0.000216881744564
p4 = 0.000000000180783
p5 = -0.000000000416932
p6 = 0.000000000229720
.....
Coeficienti transformare 3D cu 7 parametri:
dtx = 83.498420694630099
dty = 45.529364475152803
dtz = 92.125457610112804
da = 6.234885793077580 cc
db = 6.999532223607610 cc
dg = -7.653583435813350 cc
dm = -20.810271014377200 ppm

133A	316893.276046	743379.249207	11.318123	-0.025954	-0.012793	0.001123
133M	316934.609971	743351.727938	11.658944	-0.026029	-0.013062	0.000944
133R	316852.588198	743403.642447	11.343093	-0.024802	-0.012553	0.001093
134A	313041.851187	746966.300294	7.751710	0.018187	-0.017706	-0.000290
134M	313017.699321	747030.841275	8.002114	0.018321	-0.018725	0.000114
134R	312998.728626	747081.254305	8.236995	0.018626	-0.018695	-0.000005
135A	310925.960839	762740.109514	11.201444	0.038839	-0.031486	-0.001556
135M	310927.782302	762643.267559	11.615454	0.039302	-0.031441	-0.001546
135R	310925.726145	762807.580619	11.410456	0.038145	-0.031381	-0.001544
136A	313114.829606	779417.615218	12.256797	-0.094394	0.051218	0.002797
136M	313043.121443	779347.347452	15.842950	-0.094557	0.052452	0.001950
136R	312989.623093	779294.612457	19.219502	-0.093907	0.053457	0.002502
137A	313986.251864	783351.561186	5.279673	-0.042136	0.048186	-0.000327
137M	314002.459097	783299.866803	5.300852	-0.042903	0.047803	-0.000148
137R	314018.306219	783246.972157	5.198105	-0.043781	0.048157	0.000105
138A	320300.595382	788924.803035	5.373775	0.005382	0.017035	0.001775
138M	320372.090780	788930.972527	5.117471	0.005780	0.016527	0.002471
138R	320483.724900	788932.370670	5.025982	0.004900	0.016670	0.002982
139A	322458.598683	794048.944732	2.446859	0.038683	0.015732	-0.002141
139M	322401.736309	794033.891413	2.428657	0.039309	0.015413	-0.002343
139R	322459.426167	794006.653538	2.703655	0.039167	0.016538	-0.002345
140A	307784.675858	770680.993806	11.221417	-0.056142	0.028806	-0.001583
140M	307561.293478	770668.901819	10.742936	-0.054522	0.028819	-0.002064
140R	307461.051646	770706.213257	10.834104	-0.054354	0.029257	-0.001896
141A	299077.736022	775306.154031	10.644983	0.034022	0.015031	0.003983
141M	299154.138741	775287.650755	10.933582	0.032741	0.015755	0.003582
141R	299227.360501	775266.572976	10.778218	0.031501	0.015976	0.004218
142A	295345.407890	783345.407122	59.433542	0.098890	-0.086878	-0.003458
142M	295341.414234	783287.270081	59.593066	0.099234	-0.085919	-0.002934
142R	295335.436672	783232.408113	59.185715	0.099672	-0.084887	-0.003285
CRNV	320346.559425	741803.674276	26.663754	-0.047575	-0.021724	-0.002246
041A	337292.745706	746290.547379	34.453247			
041M	337309.872391	746245.310130	34.117908			
041R	337270.680420	746325.867877	32.965410			
042A	326893.296557	745399.501106	24.919049			
042M	326853.541464	745289.179163	28.450710			
042R	326952.540131	745499.324466	24.608467			
043A	321026.674600	741325.712556	16.270501			
043M	321082.008344	741239.941683	17.813148			
043R	321021.981504	741236.510500	16.543857			
044A	313450.529384	738342.427197	10.502229			
044M	313522.326751	738381.957997	10.539778			

044R	313355.097110	738284.480148	10.659877
045A	308828.967736	728836.944478	11.323070
045M	308804.578133	728781.657819	11.534765
045R	308778.977816	728732.249880	11.585246
046M	305435.445912	721347.778092	12.473748
143A	295330.684954	789728.116320	10.698802
143M	295330.884427	789647.663882	10.853653
143R	295346.704542	789555.053905	10.611894
144A	303860.853132	792082.923582	30.342778
144M	303825.049092	792066.618628	29.478699
144R	303857.714122	792056.297957	30.363414
CALR	303238.189618	685015.156284	38.753956
COST	302359.890008	792631.058728	12.328130
HAR1	358592.272300	734508.655861	37.220153
ISTR	348192.990799	794829.193773	30.830679
SLOB	343194.341352	688026.481451	39.799102

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot1a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot1a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 133.431133270264010
p2 = 0.000290846246571
p3 = 0.000287996326733
p4 = 0.000000000116468
p5 = -0.000000000457872
p6 = 0.000000000294018
.....
Coeficienti transformare 3D cu 10 parametri:
dtx = -6090.813476562500000
dty = -5156.342529296879500
dtz = 8267.977783203130500
da = 242.444069333161990 cc
db = -1884.534476484700000 cc
dg = -1288.984002609010100 cc
dm = -24.122302420437300 ppm
e12 = -0.000000000152597
e13 = -0.000000000128470
e23 = 0.000000000201271

135M	310927.819783	762643.243044	11.621052	0.076783	-0.055956	0.004052
136A	313114.837360	779417.620427	12.258212	-0.086640	0.056427	0.004212
136M	313043.128872	779347.352735	15.844389	-0.087128	0.057735	0.003389
136R	312989.630280	779294.617790	19.220959	-0.086720	0.058790	0.003959
137M	314002.483695	783299.875257	5.305469	-0.018305	0.056257	0.004469
138A	320300.660612	788924.768938	5.375413	0.070612	-0.017062	0.003413
138M	320372.155976	788930.937788	5.118948	0.070976	-0.018212	0.003948
138R	320483.789963	788932.334938	5.027193	0.069963	-0.019062	0.004193
141M	299154.066502	775287.646517	10.933073	-0.039498	0.011517	0.003073
142M	295341.310264	783287.354804	59.601691	-0.004736	-0.001196	0.005691
143M	295330.811394	789647.827634	10.877711	0.025394	-0.076366	0.002711
144M	303825.084157	792066.741792	29.511282	0.058157	-0.081208	0.004282
041A	337292.762502	746290.898267	34.465597			
041M	337309.889520	746245.661928	34.130415			
041R	337270.697087	746326.217941	32.977690			
042A	326893.453538	745399.718398	24.957683			
042M	326853.700444	745289.396911	28.489823			
042R	326952.695089	745499.541683	24.646607			
043A	321026.944339	741325.867887	16.332450			
043M	321082.279226	741240.098556	17.875434			
043R	321022.252844	741236.666337	16.606199			
044A	313450.890389	738342.453981	10.577481			
044M	313522.686770	738381.986110	10.614891			
044R	313355.459530	738284.505174	10.735335			
045A	308829.555292	728836.883448	11.441090			
045M	308805.167143	728781.596221	11.653054			
045R	308779.568132	728732.187674	11.703769			
046M	305436.245495	721347.626003	12.629853			
133A	316893.532509	743379.322417	11.372867			
133M	316934.866729	743351.801958	11.713792			
133R	316852.844416	743403.714871	11.397745			
134A	313042.060914	746966.301520	7.793109			
134M	313017.908101	747030.842033	8.043292			
134R	312998.936669	747081.254696	8.278000			
135A	310925.997666	762740.085108	11.206925			
135R	310925.762521	762807.556297	11.415856			
137A	313986.276697	783351.569810	5.284381			
137R	314018.330577	783246.980442	5.202629			
139A	322458.713821	794048.880196	2.453590			
139M	322401.851374	794033.827584	2.435515			
139R	322459.540800	794006.589073	2.710282			

140A	307784.667727	770680.975024	11.222282
140M	307561.284508	770668.882404	10.743810
140R	307461.042177	770706.193727	10.834981
141A	299077.663067	775306.149890	10.644424
141R	299227.288949	775266.568616	10.777751
142A	295345.304150	783345.492534	59.442292
142R	295335.332460	783232.492192	59.194214
143A	295330.612456	789728.281099	10.723095
143R	295346.631097	789555.216371	10.635690
144A	303860.888638	792083.046562	30.375400
144R	303857.749365	792056.420745	30.395960
CALR	303240.465377	685014.961788	39.218252
COST	302359.917371	792631.199951	12.362766
CRNV	320346.825155	741803.814672	26.723909
HAR1	358592.007265	734509.587623	37.214539
ISTR	348192.884370	794828.774878	30.721699
SLOB	343195.932138	688028.158453	40.284465

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot2a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot2a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = 7075.926757812500000
p2 = 0.014532221481204
p3 = -0.021914765238762
p4 = 0.000000015183950
p5 = 0.000000037959815
p6 = 0.000000008137006
p7 = -0.000000000000001
p8 = -0.000000000000016
p9 = -0.000000000000015
p10 = -0.000000000000001
.....
Coeficienti transformare 3D cu 7 parametri:
dtx = 73.185070056847493
dty = 41.168651053362098
dtz = 84.084323686456202
da = 6.946198049534570 cc
db = 7.146886030710710 cc
dg = -6.845983162043100 cc
dm = -18.677380399147498 ppm

007A	416812.074925	862597.927079	2.102127	-0.034075	0.050079	0.075127
007M	416951.251660	862639.864372	2.436466	-0.033340	0.050372	0.073466
007R	416719.093039	862569.462652	2.318172	-0.033961	0.050652	0.076172
011A	416195.365199	818878.714838	4.044821	0.022199	0.015838	0.072821
011M	416147.538737	819163.577481	4.057210	0.023737	0.016481	0.072210
011R	416131.004845	819279.439607	3.869475	0.023845	0.017607	0.072475
012A	417613.239849	809033.940643	4.734340	0.006849	-0.041357	0.078340
012M	417582.047669	808954.696132	5.005477	0.007669	-0.040868	0.078477
012R	417552.943339	808861.592820	4.624882	0.007339	-0.041180	0.078882
015A	445132.424010	835524.300686	5.118414	-0.016990	-0.078314	0.077414
015M	445085.917436	835473.190890	5.486235	-0.016564	-0.078110	0.078235
015R	445019.406487	835381.558303	4.321459	-0.016513	-0.076697	0.079459
017A	428383.072308	798010.426928	4.116375	-0.034692	0.075928	0.071375
017M	428671.114475	798190.992185	3.915375	-0.039525	0.077185	0.074375
017R	428515.477333	798091.227176	4.130056	-0.036667	0.076176	0.073056
018A	419592.130140	795543.743704	5.077009	0.068140	0.010704	0.057009
018M	419548.586265	795503.549886	5.568815	0.068265	0.009886	0.057815
018R	419581.162410	795579.120941	5.010772	0.067410	0.009941	0.057772
019A	417883.958444	785467.420121	64.509285	0.086444	0.043121	0.081285
019M	417935.520364	785419.097283	55.371039	0.085364	0.043283	0.081039
019R	417898.615297	785398.275771	54.543578	0.085297	0.042771	0.081578
020A	423598.826186	776296.328890	5.391112	-0.000814	0.015890	0.050112
020M	423688.515010	776368.938851	5.517421	-0.001990	0.016851	0.048421
020R	423759.468055	776270.511996	5.198736	-0.002945	0.016996	0.048736
021A	426183.040435	770760.282706	6.518920	-0.037565	-0.018294	0.058920
021M	426208.247172	770857.163738	6.314742	-0.037828	-0.017262	0.057742
021R	426146.663854	770635.194788	6.074321	-0.037146	-0.020212	0.060321
022A	431555.438844	760659.189231	4.987437	-0.076156	-0.063769	0.079437
022M	431667.147334	760587.959965	6.022501	-0.077666	-0.063035	0.079501
022R	431463.191212	760707.873737	4.860508	-0.074788	-0.064263	0.078508
SULI	416895.792440	865939.379570	14.454140	-0.092560	0.063570	0.078140
TLCA	415729.017419	798803.314281	21.687033	0.074419	-0.029719	0.091033
001A	387619.011575	862500.314131	2.085483	0.000575	-0.044869	0.076483
001M	387573.559702	862594.604124	2.316479	0.001702	-0.045876	0.076479
001R	387776.341233	862191.957614	1.806643	-0.002767	-0.042386	0.075643
002A	395419.682701	852131.430130	2.535361	-0.048299	0.019130	0.076361
002M	395468.373590	852077.560988	2.391105	-0.048410	0.018988	0.076105
002R	395501.076112	852040.331705	2.440634	-0.047888	0.018705	0.076634
003A	399808.169199	837074.634902	2.120078	0.043199	0.027902	0.042078
003M	399883.100922	837096.614900	4.797575	0.042922	0.027900	0.041575

003R	399845.444330	837032.002257	3.604248	0.043330	0.027257	0.042248
004A	406042.684537	823278.426376	4.148414	0.026537	0.040376	0.082414
004M	406133.137824	823190.259575	5.777491	0.025824	0.039575	0.083491
004R	406212.869024	823101.146042	4.053306	0.025024	0.039042	0.084306
005A	410695.997816	814521.691316	18.058814	0.003816	-0.026684	0.095814
005M	410808.276815	814488.059595	15.334259	0.003815	-0.026405	0.095259
005R	410699.935600	814549.601588	17.309744	0.003600	-0.026412	0.095744
006A	416515.841218	874096.324347	1.286302			
006M	416480.942983	874210.025849	2.196090			
006R	416434.987551	874160.416491	1.820875			
008A	418009.544190	851593.094256	2.353029			
008M	418009.695135	851721.470516	2.518526			
008R	418077.380615	851684.253978	2.256872			
009A	417764.544594	839816.983311	3.453362			
009M	417760.505387	839633.959820	3.634235			
009R	417757.814321	839500.849078	3.530116			
010A	417522.827125	828227.250309	3.379804			
010M	417547.272513	828349.956027	4.060117			
010R	417563.768585	828432.130948	3.578853			
013A	438319.864835	862824.393934	1.386240			
013M	438389.578393	862750.801404	1.729358			
013R	438437.470019	862702.577869	1.581439			
014A	444259.648558	855659.688422	1.034128			
014M	444199.198154	855847.771303	1.641142			
014R	444107.077340	855989.613879	0.864027			
016A	436452.899688	816592.382657	4.788578			
016M	436320.149082	816485.892325	5.562352			
016R	436200.721537	816397.665837	5.248612			
BRAI	422983.606561	733381.573601	36.757824			
INSU	382376.798472	705637.078815	49.693228			
ISTR	348192.920059	794829.413464	34.738865			

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot2a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot2a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = -160.291122555733010
p2 = -0.000424212529651
p3 = 0.000249878981094
p4 = 0.000000000418688
p5 = -0.000000000688983
p6 = -0.000000000075579
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -13657.308877650599000
dty = -19725.153747558601000
dtz = 21789.940063476599000
da = 1083.852553690650000 cc
db = -1145.775150787590100 cc
dg = -375.504451187473020 cc
dm = 4628.411232260989900 ppm
e12 = 0.001322957261436
e13 = -0.000283355104330
e23 = 0.000515509104702
t12 = 0.000085462474090
t21 = -0.003490273200441

006A	416516.138794	874096.250029	1.203360	0.030794	0.018029	-0.006640
006M	416481.239307	874209.952104	2.112453	0.027307	0.018104	-0.006547
006R	416435.284476	874160.342022	1.736596	0.028476	0.018022	-0.006404
007A	416812.118310	862597.924791	2.036505	0.009310	0.047791	0.009505
007M	416951.293896	862639.863697	2.371358	0.008896	0.049697	0.008358
007R	416719.135117	862569.460123	2.252223	0.008117	0.048123	0.010223
008A	418009.436759	851593.130276	2.295793	0.025759	0.016276	-0.012207
008M	418009.588129	851721.506733	2.461252	0.025129	0.017733	-0.011748
008R	418077.274408	851684.290265	2.199441	0.026408	0.017265	-0.012559
009A	417764.373397	839817.009565	3.399009	0.008397	-0.004435	-0.001991
009M	417760.333233	839633.985907	3.579885	0.006233	-0.004093	-0.002115
009R	417757.642600	839500.874588	3.475769	0.006600	-0.003412	-0.002231
010A	417522.698564	828227.224341	3.319973	-0.026436	0.004341	0.000973
010M	417547.139740	828349.932293	4.000227	-0.029260	0.006293	0.001227
010R	417563.637420	828432.106921	3.518944	-0.026580	0.005921	0.000944
011A	416195.342225	818878.609593	3.973962	-0.000775	-0.089407	0.001962
011M	416147.511640	819163.474365	3.987542	-0.003360	-0.086635	0.002542
011R	416130.976991	819279.337006	3.800278	-0.004009	-0.084994	0.003278
013A	438320.038281	862824.498775	1.742106	-0.070719	-0.074225	0.011106
013M	438389.749890	862750.907338	2.085831	-0.072110	-0.072662	0.010831
013R	438437.642033	862702.683809	1.938396	-0.069967	-0.073191	0.010396
014A	444259.812056	855659.820697	1.396933	0.017056	-0.029303	-0.016067
014M	444199.359985	855847.904344	2.007479	0.011985	-0.028656	-0.015521
014R	444107.242925	855989.745127	1.231525	0.013925	-0.030873	-0.014475
015A	445132.489325	835524.421450	5.049992	0.048325	0.042450	0.008992
015M	445085.980272	835473.312167	5.416649	0.046272	0.043167	0.008649
015R	445019.473817	835381.677007	4.250016	0.050817	0.042007	0.008016
016A	436453.011327	816592.366265	4.605798	-0.006673	0.068265	-0.005202
016M	436320.257168	816485.876084	5.380302	-0.009832	0.069084	-0.005698
016R	436200.831084	816397.647868	5.067266	-0.006916	0.067868	-0.006734
SULI	416895.839803	865939.385862	14.384974	-0.045197	0.069862	0.008974
001A	387619.433097	862499.942855	2.466985			
001M	387573.982873	862594.232114	2.698308			
001R	387776.754961	862191.589768	2.186757			
002A	395419.797106	852131.210957	2.784402			
002M	395468.487271	852077.342314	2.639257			
002R	395501.188608	852040.113645	2.688196			
003A	399808.149664	837074.459194	2.291988			
003M	399883.067615	837096.445374	4.968267			

003R	399845.417296	837031.829732	3.775381
004A	406042.666903	823278.256490	4.166598
004M	406133.112612	823190.093169	5.794292
004R	406212.852195	823100.976582	4.068863
005A	410696.005141	814521.520674	17.985466
005M	410808.296874	814487.884541	15.260485
005R	410699.945934	814549.429840	17.236629
012A	417613.392291	809033.746785	4.620713
012M	417582.200628	808954.501607	4.891480
012R	417553.100201	808861.396235	4.510465
017A	428383.543659	798010.152232	4.003291
017M	428671.583269	798190.721169	3.802505
017R	428515.947064	798090.954345	4.017086
018A	419592.644482	795543.379576	4.904260
018M	419549.099573	795503.185738	5.395347
018R	419581.675932	795578.757165	4.838105
019A	417884.553563	785466.981869	64.225213
019M	417936.160463	785418.641096	55.088092
019R	417899.260171	785397.817322	54.259527
020A	423600.098315	776295.633026	5.201247
020M	423689.783459	776368.245345	5.330627
020R	423760.742776	776269.816197	5.013747
021A	426184.584678	770759.480128	6.400436
021M	426209.787632	770856.363152	6.197269
021R	426148.216317	770634.388262	5.954414
022A	431557.573138	760658.158996	5.110665
022M	431669.281856	760586.930259	6.151018
022R	431465.322476	760706.844185	4.979402
BRAI	422987.393577	733379.734376	36.088214
INSU	382383.524217	705633.674264	36.523925
ISTR	348195.225377	794827.796252	31.249508
TLCA	415729.358301	798803.001030	21.496686

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot3a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot3a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = -3441.663818359380000
p2 = -0.005771515774541
p3 = 0.016220666468144
p4 = -0.000000003603866
p5 = -0.000000040231875
p6 = 0.000000002773760
p7 = -0.000000000000001
p8 = 0.000000000000006
p9 = 0.000000000000024
p10 = -0.000000000000006
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -1460.075462037689900
dty = 4549.412109375000000
dtz = -546.608993530272980
da = -162.194651383490000 cc
db = -26.965516757249802 cc
dg = 160.009610439743990 cc
dm = -431.672273407456940 ppm
e12 = -0.000180689597073
e13 = 0.000115344784717
e23 = -0.000234078096093
t12 = 0.000128886604898
t21 = 0.000306301681121

051A	346082.865440	731673.658688	9.703469	0.047440	0.013688	-0.038531
051M	346209.404538	731848.118884	9.515022	0.047538	0.012884	-0.035978
051R	345970.682832	731512.342102	9.230397	0.048832	0.015102	-0.041603
INSU	382376.876650	705636.885277	40.997652	-0.046350	-0.002723	0.009652
TLCA	415728.979094	798803.337689	21.595878	0.036094	-0.006311	-0.000122
023A	439607.871335	749901.603510	7.903516	-0.077665	0.054510	-0.014484
023M	439674.279654	749913.109304	6.943742	-0.076346	0.055304	-0.014258
023R	439720.708431	749989.154407	7.473685	-0.074569	0.055407	-0.014315
024A	441648.457383	739853.211397	7.578303	-0.020617	0.041397	-0.022697
024M	441576.794621	739771.473157	7.629121	-0.019379	0.040157	-0.020879
024R	441528.318823	739716.897734	7.511501	-0.018177	0.038734	-0.020499
025A	432925.293664	737731.868717	6.348740	0.023664	-0.051283	0.021740
025M	433020.342889	737750.415967	7.348488	0.023889	-0.052033	0.021488
025R	432795.115375	737728.178981	6.469793	0.024375	-0.051019	0.021793
026A	423149.766976	733893.553859	8.593829	0.032976	-0.011141	0.017829
026M	423257.762803	733953.215513	8.565644	0.032803	-0.012487	0.018644
026R	423340.567257	733965.639284	8.109285	0.032257	-0.013716	0.018285
027A	419789.324000	746077.992576	6.878796	0.030000	-0.083424	0.031796
027M	419904.625972	746072.166046	6.912898	0.029972	-0.082954	0.032898
027R	420008.427368	746087.119728	6.133800	0.030368	-0.082272	0.032800
028A	406464.333406	750156.975124	6.786548	-0.018594	-0.063876	0.000548
028M	406560.711854	750097.165655	6.971418	-0.019146	-0.064345	0.001418
028R	406683.394192	750022.479245	6.422473	-0.018808	-0.063755	0.001473
029A	394441.107685	747285.550094	7.666759	-0.037315	0.069094	-0.016241
029M	394330.708836	747276.635543	7.777436	-0.037164	0.068543	-0.016564
029R	394272.206387	747275.262218	7.620586	-0.037613	0.069218	-0.016414
030A	382128.716306	747918.121068	9.305314	-0.006694	0.038068	-0.025686
030M	382206.307919	747787.253676	9.137235	-0.009081	0.041676	-0.023765
030R	382224.806221	747980.612234	10.738243	-0.005779	0.036234	-0.025757
031A	369670.606004	743265.658302	7.102708	-0.032996	0.051302	0.006708
031M	369559.182259	743236.468405	7.730134	-0.033741	0.050405	0.007134
031R	369381.302998	743181.578101	7.299109	-0.035002	0.051101	0.008109
032A	414382.585603	731188.586099	9.654879	0.026603	0.015099	-0.002121
032M	414313.487753	731091.760808	9.845224	0.026753	0.015808	-0.001776
032R	414418.078573	731124.091755	9.262816	0.026573	0.015755	-0.002184

033A	406726.865577	731132.291268	8.025273	0.049577	0.003268	-0.017727
033M	406641.779887	731114.202445	7.748261	0.049887	0.003445	-0.018739
033R	406615.206847	731046.270262	6.734564	0.049847	0.005262	-0.018436
034A	400468.175495	728211.011488	6.571754	0.073495	-0.000512	-0.022246
034M	400340.294080	728187.349609	6.320205	0.072080	0.000609	-0.022795
034R	400158.581790	728154.394168	5.997954	0.069790	0.001168	-0.023046
035A	389876.630201	728435.562611	8.326966	-0.001799	0.016611	-0.013034
035M	389988.571947	728449.274797	8.567563	-0.000053	0.015797	-0.013437
035R	390067.638763	728384.116595	9.674671	0.000763	0.014595	-0.014329
036A	380483.006990	725869.961884	8.287160	-0.010010	-0.020116	0.007160
036M	380353.686273	725976.364630	8.149887	-0.008727	-0.018370	0.007887
036R	380436.609777	726152.001121	7.366101	-0.007223	-0.015879	0.008101
037A	370878.424952	722887.812242	7.211031	-0.040048	0.005242	-0.011969
037M	370995.505536	722897.809973	7.186559	-0.039464	0.004973	-0.011441
037R	371119.100264	722880.490752	9.442842	-0.038736	0.002752	-0.011158
038A	364471.409457	728407.764667	9.897650	-0.082543	0.014667	0.021650
038M	364593.015983	728431.593258	10.333944	-0.082017	0.014258	0.021944
038R	364703.380478	728453.995636	10.215716	-0.081522	0.014636	0.022716
039A	357814.789109	733621.911948	13.487784	-0.045891	-0.009052	0.036784
039M	357804.862246	733566.787386	21.383586	-0.045754	-0.014614	0.035586
039R	357764.228437	733565.849803	15.310984	-0.046563	-0.010197	0.035984
040A	350939.166778	741111.969201	28.824255	0.088778	-0.065799	0.008255
040M	351050.605985	741097.149583	28.148115	0.088985	-0.065417	0.009115
040R	351156.772336	741075.525132	26.599398	0.088336	-0.063868	0.009398
041A	337292.666124	746290.470419	34.225996			
041M	337309.792994	746245.233248	33.891723			
041R	337270.600430	746325.792182	32.737414			
042A	326893.168600	745399.465557	24.794281			
042M	326853.414117	745289.140869	28.329022			
042R	326952.412102	745499.289161	24.480652			
043A	321026.529395	741325.700167	16.266288			
043M	321081.863884	741239.927701	17.809340			
043R	321021.836592	741236.497743	16.540573			
044A	313450.354072	738342.453201	10.565959			
044M	313522.151694	738381.983634	10.603132			
044R	313354.921503	738284.506478	10.724069			
045A	308828.796939	728836.986039	11.173461			
045M	308804.407395	728781.699338	11.382631			
045R	308778.807094	728732.291491	11.430850			
046A	305465.359623	721414.282672	11.532093			
046M	305435.278497	721347.839057	11.842865			
046R	305384.053805	721235.784754	11.818946			
047A	302140.403847	714832.123452	14.989100			
047M	302052.092538	714780.111157	15.682108			
047R	302261.962644	714938.545992	13.766197			
048A	300072.971685	703566.320038	12.826139			
048M	300095.973484	703693.972871	12.390309			
048R	300038.697218	703467.873433	12.430691			
049A	295499.854088	698319.724125	15.822061			
049M	295444.305353	698330.243194	20.599786			
049R	295348.260810	698344.239698	18.034119			
050A	292813.565900	688130.280478	24.913652			
050M	292777.102794	688253.957584	24.491279			
050R	292925.269947	687869.374482	25.873920			
052A	339859.953557	730227.882548	21.407627			
052M	339741.954389	730285.321969	19.650295			
052R	339803.163364	730398.377603	19.790838			
053A	331697.581986	732955.100853	9.959334			
053M	331560.163000	732925.288390	11.979129			
053R	331419.013872	732890.574227	9.970611			
054A	323985.958409	727267.975130	12.504049			
054M	323955.457301	727243.119644	13.257402			
054R	323841.170213	727201.054921	12.348343			
055A	318131.094909	720311.523918	11.386085			
055M	318085.672308	720216.459455	11.781794			
055R	318044.958548	720127.401290	11.894130			
056A	310023.439068	709292.356152	11.417141			

056M	309970.700102	709111.914194	11.610468
056R	309916.587758	708889.638939	11.616392
057A	305368.068951	698570.547439	15.275015
057M	305333.772314	698490.148696	15.829965
057R	305399.693571	698649.669778	15.337094
058A	301495.497401	686645.043952	11.021631
058M	301425.243210	686701.534675	10.160222
058R	301547.781215	686604.207644	12.213162
BRAI	422983.706585	733381.435342	36.502354
CALR	303238.101039	685015.297750	32.618068
COST	302359.458422	792631.421434	5.028085
CRNV	320346.410595	741803.658480	26.659435
HAR1	358592.325850	734508.517894	36.863513
ISTR	348192.779330	794829.361934	25.522526
LEHL	328627.998773	647465.113805	56.956073
SLOB	343194.445967	688026.427635	36.859355

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot3a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot3a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = -730.480621337890970
p2 = -0.002840683911927
p3 = 0.000761225412134
p4 = -0.000000000656099
p5 = -0.000000001129678
p6 = -0.000000003564057
p7 = 0.000000000000002
p8 = -0.000000000000002
p9 = 0.000000000000001
p10 = 0.000000000000001
.....
Coeficienti transformare 3D cu 7 parametri:
dtx = 72.270811904592406
dty = 38.406958402609199
dtz = 79.976694770930393
da = 6.936818429892649 cc
db = 7.311473596531129 cc
dg = -7.030600834289520 cc
dm = -17.987355040728097 ppm

030A	382128.744846	747918.158769	9.322334	0.021846	0.075769	-0.008666
030M	382206.336175	747787.291194	9.152612	0.019175	0.079194	-0.008388
030R	382224.834593	747980.650923	10.755323	0.022593	0.074923	-0.008677
035A	389876.621524	728435.568631	8.345499	-0.010476	0.022631	0.005499
035M	389988.563164	728449.280837	8.586912	-0.008836	0.021837	0.005912
035R	390067.629685	728384.123179	9.694853	-0.008315	0.021179	0.005853
036A	380483.003652	725869.972405	8.267235	-0.013348	-0.009595	-0.012765
036M	380353.683225	725976.375392	8.129342	-0.011775	-0.007608	-0.012658
036R	380436.606974	726152.011692	7.345168	-0.010026	-0.005308	-0.012832
037A	370878.428708	722887.814155	7.210021	-0.036292	0.007155	-0.012979
037M	370995.509165	722897.811959	7.185109	-0.035835	0.006959	-0.012891
037R	371119.103435	722880.494430	9.441156	-0.035565	0.006430	-0.012844
038A	364471.428284	728407.776822	9.884241	-0.063716	0.026822	0.008241
038M	364593.034624	728431.605945	10.320007	-0.063376	0.026945	0.008007
038R	364703.399016	728454.008424	10.201293	-0.062984	0.027424	0.008293
039A	357814.824238	733621.925661	13.484864	-0.010762	0.004661	0.033864
039M	357804.896307	733566.806863	21.380800	-0.011693	0.004863	0.032800
039R	357764.263328	733565.864677	15.308244	-0.011672	0.004677	0.033244
044A	313450.481947	738342.264383	10.502088	-0.054053	-0.072617	0.003088
044M	313522.279455	738381.795405	10.540008	-0.054545	-0.073595	0.003008
044R	313355.049493	738284.317023	10.659236	-0.053507	-0.070977	0.002236
045A	308828.921947	728836.747693	11.276090	0.082947	-0.008307	0.007090
045M	308804.532360	728781.460841	11.487409	0.084360	-0.008159	0.007409
045R	308778.932048	728732.052723	11.537530	0.085048	-0.008277	0.007530
049A	295499.980063	698319.257357	19.282195	0.015063	-0.008643	0.028195
049M	295444.430882	698329.779523	24.060714	0.014882	-0.007477	0.027714
049R	295348.386936	698343.773302	21.496966	0.014936	-0.005698	0.026966
050A	292813.691106	688129.732255	30.406717	-0.076894	0.038255	-0.043283
050M	292777.228226	688253.409530	29.962073	-0.076774	0.038530	-0.042927
050R	292925.394569	687868.826279	31.411404	-0.077431	0.036279	-0.044596
051A	346082.916954	731673.633949	9.749340	0.098954	-0.011051	0.007340
051M	346209.456109	731848.094759	9.559393	0.099109	-0.011241	0.008393
051R	345970.734369	731512.316326	9.277695	0.100369	-0.010674	0.005695
052A	339860.012589	730227.840101	21.490390	0.059589	0.008101	-0.008610
052M	339742.013942	730285.277837	19.732785	0.058942	0.007837	-0.008215
052R	339803.222944	730398.334057	19.871768	0.059944	0.007057	-0.008232
053A	331697.662013	732955.017055	10.029259	-0.022987	-0.020945	0.001259
053M	331560.243002	732925.205340	12.049422	-0.022998	-0.020660	0.001422
053R	331419.094361	732890.488899	10.041257	-0.023639	-0.020101	0.001257
054A	323986.046186	727267.838874	12.696788	-0.004814	0.025874	-0.015212

054M	323955.545015	727242.983707	13.450991	-0.004985	0.025707	-0.015009
054R	323841.258232	727200.917521	12.543466	-0.004768	0.025521	-0.015534
055A	318131.186914	720311.330670	11.913533	0.099914	-0.043330	-0.013467
055M	318085.764251	720216.265900	12.315087	0.101251	-0.044100	-0.013913
055R	318045.050462	720127.207267	12.432912	0.102462	-0.044733	-0.014088
058A	301495.600271	686644.554060	16.127892	-0.037729	-0.020940	0.019892
058M	301425.346403	686701.043932	15.262028	-0.036597	-0.020068	0.019028
058R	301547.883776	686603.718804	17.322518	-0.037224	-0.021196	0.019518
CALR	303238.195808	685014.827220	37.869002	-0.027192	-0.007780	0.027002
INSU	382376.844853	705636.843768	41.003989	-0.078147	-0.044232	0.015989
ISTR	348192.954206	794829.244095	30.746066	0.035206	0.039095	-0.007934
SLOB	343194.455580	688026.222644	38.672890	-0.087420	0.001644	-0.019110
023A	439607.879482	749901.402179	8.289621			
023M	439674.287954	749912.906757	7.330878			
023R	439720.716808	749988.951883	7.856724			
024A	441648.448936	739852.991363	8.685809			
024M	441576.786023	739771.253641	8.737851			
024R	441528.310144	739716.678456	8.621004			
025A	432925.281113	737731.708537	7.181744			
025M	433020.330241	737750.255913	8.184505			
025R	432795.102800	737728.019758	7.297820			
026A	423149.749113	733893.450048	9.197022			
026M	423257.745013	733953.111174	9.170921			
026R	423340.549528	733965.534163	8.716973			
027A	419789.326434	746077.916250	7.032691			
027M	419904.628364	746072.089146	7.068815			
027R	420008.429861	746087.041712	6.290841			
028A	406464.347981	750156.957059	6.726875			
028M	406560.726250	750097.147396	6.912890			
028R	406683.408462	750022.460153	6.365393			
029A	394441.124623	747285.568151	7.636926			
029M	394330.725827	747276.653926	7.747768			
029R	394272.223439	747275.280613	7.590993			
031A	369670.640839	743265.693840	7.128204			
031M	369559.217105	743236.504318	7.755759			
031R	369381.338029	743181.613540	7.324811			
032A	414382.566010	731188.522608	10.051804			
032M	414313.468023	731091.697586	10.241723			
032R	414418.058926	731124.027688	9.661578			
033A	406726.849375	731132.257789	8.250323			
033M	406641.763738	731114.169035	7.971856			
033R	406615.190743	731046.236064	6.958296			
034A	400468.158972	728210.991353	6.710505			
034M	400340.277638	728187.329606	6.457137			
034R	400158.565458	728154.374376	6.132318			
040A	350939.222109	741111.986274	28.895164			
040M	351050.661197	741097.166461	28.218457			
040R	351156.827539	741075.541145	26.669079			
041A	337292.753281	746290.443837	34.430231			
041M	337309.880083	746245.206487	34.094638			
041R	337270.687878	746325.764400	32.942648			
042A	326893.276157	745399.378983	24.942254			
042M	326853.521122	745289.056669	28.473896			
042R	326952.519744	745499.202717	24.631649			
043A	321026.643936	741325.569870	16.293418			
043M	321081.977969	741239.798841	17.836001			
043R	321021.950964	741236.367555	16.566668			
046A	305465.483295	721413.998755	12.045365			
046M	305435.402123	721347.554927	12.360959			
046R	305384.177425	721235.499852	12.345207			
047A	302140.527896	714831.792242	16.083984			
047M	302052.216671	714779.779513	16.783071			
047R	302262.086651	714938.215306	14.849294			
048A	300073.090204	703565.920158	15.310744			
048M	300096.092111	703693.573506	14.856446			
048R	300038.815790	703467.472465	14.930118			
056A	310023.537995	709292.063640	12.937407			

056M	309970.798953	709111.620633	13.150298
056R	309916.686521	708889.343992	13.180227
057A	305368.169370	698570.167745	18.245675
057M	305333.872686	698489.768687	18.813450
057R	305399.793965	698649.290829	18.295266
BRAI	422983.684462	733381.352381	37.112751
COST	302359.727366	792631.032062	11.596872
CRNV	320346.526101	741803.531890	26.686561
HAR1	358592.358176	734508.551960	36.859388
LEHL	328628.026735	647464.484505	64.058229
TLCA	415729.098712	798803.139172	20.378516

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot3a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot3a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = 784.704101562500000
p2 = 0.001705903559923
p3 = -0.003394383937120
p4 = -0.000000001379334
p5 = 0.000000011018429
p6 = 0.000000000167176
p7 = 0.000000000000003
p8 = -0.000000000000002
p9 = -0.000000000000007
p10 = 0.000000000000001
.....
Coeficienti transformare 3D cu 7 parametri:
dtx = 66.516362362715896
dty = 35.229249355139501
dtz = 73.298964455001595
da = 7.225378915874460 cc
db = 7.490363811179640 cc
dg = -6.727469608041939 cc
dm = -16.516403131032298 ppm

041A	337292.787933	746290.546243	34.327689	0.018933	-0.068757	-0.003311
041M	337309.914793	746245.308838	33.992562	0.019793	-0.068162	-0.003438
041R	337270.722473	746325.866842	32.839774	0.018473	-0.069158	-0.004226
042A	326893.296142	745399.472662	24.885962	-0.079858	-0.109338	-0.005038
042M	326853.541128	745289.150157	28.418578	-0.079872	-0.108843	-0.004422
042R	326952.539745	745499.296584	24.574397	-0.080255	-0.109416	-0.005603
043A	321026.658195	741325.653371	16.274493	-0.068805	-0.078629	0.002493
043M	321081.992370	741239.882255	17.817363	-0.068630	-0.078745	0.003363
043R	321021.965280	741236.450921	16.548125	-0.068720	-0.078079	0.003125
044A	313450.487186	738342.338091	10.496054	-0.048814	0.001091	-0.002946
044M	313522.284772	738381.869223	10.533930	-0.049228	0.000223	-0.003070
044R	313355.054633	738284.390577	10.653265	-0.048367	0.002577	-0.003735
045A	308828.927167	728836.804121	11.266754	0.088167	0.048121	-0.002246
045M	308804.537584	728781.517169	11.477984	0.089584	0.048169	-0.002016
045R	308778.937269	728732.108961	11.528016	0.090269	0.047961	-0.001984
049A	295499.987443	698319.259388	19.254261	0.022443	-0.006612	0.000261
049M	295444.438173	698329.781530	24.032818	0.022173	-0.005470	-0.000182
049R	295348.394076	698343.775261	21.469133	0.022076	-0.003739	-0.000867
050A	292813.701803	688129.717384	30.445568	-0.066197	0.023384	-0.004432
050M	292777.238782	688253.394816	30.000191	-0.066218	0.023816	-0.004809
050R	292925.405617	687868.811105	31.451575	-0.066383	0.021105	-0.004425
052A	339860.062471	730227.920703	21.497037	0.109471	0.088703	-0.001963
052M	339742.063608	730285.358440	19.739330	0.108608	0.088440	-0.001670
052R	339803.272620	730398.414869	19.878031	0.109620	0.087869	-0.001969
053A	331697.697941	732955.095850	10.032005	0.012941	0.057850	0.004005
053M	331560.278749	732925.283993	12.052320	0.012749	0.057993	0.004320
053R	331419.129925	732890.567400	10.044315	0.011925	0.058400	0.004315
054A	323986.074824	727267.903803	12.705954	0.023824	0.090803	-0.006046
054M	323955.573625	727243.048577	13.460136	0.023625	0.090577	-0.005864
054R	323841.286704	727200.982248	12.552543	0.023704	0.090248	-0.006457
058A	301495.624795	686644.543197	16.108625	-0.013205	-0.031803	0.000625
058M	301425.370783	686701.033102	15.243238	-0.012217	-0.030898	0.000238
058R	301547.908406	686603.707918	17.302890	-0.012594	-0.032082	-0.000110
CALR	303238.224058	685014.815203	37.836485	0.001058	-0.019797	-0.005515
023A	439608.062134	749901.582802	8.522823			
023M	439674.470696	749913.087445	7.564899			
023R	439720.899563	749989.132716	8.087180			
024A	441648.641746	739853.158650	9.467940			
024M	441576.978785	739771.420757	9.521072			
024R	441528.502875	739716.845457	9.404925			

025A	432925.462595	737731.866490	7.810131
025M	433020.511850	737750.413962	8.814595
025R	432795.284093	737728.177613	7.923218
026A	423149.918941	733893.595391	9.709212
026M	423257.914957	733953.256682	9.684046
026R	423340.719586	733965.679748	9.231490
027A	419789.482639	746078.077132	7.098167
027M	419904.784743	746072.250102	7.136208
027R	420008.586381	746087.202764	6.359084
028A	406464.481669	750157.114453	6.468966
028M	406560.860122	750097.304770	6.658368
028R	406683.542569	750022.617505	6.115120
029A	394441.242662	747285.712754	7.427767
029M	394330.843710	747276.798437	7.538466
029R	394272.341237	747275.425080	7.381500
030A	382128.844315	747918.295529	9.064805
030M	382206.435851	747787.427817	8.899160
030R	382224.934158	747980.787844	10.495906
031A	369670.725290	743265.814876	6.988872
031M	369559.301413	743236.625231	7.617061
031R	369381.422114	743181.734246	7.187288
032A	414382.724862	731188.657727	10.451008
032M	414313.626843	731091.832513	10.641079
032R	414418.217877	731124.162738	10.062212
033A	406726.997001	731132.387372	8.537929
033M	406641.911252	731114.298531	8.258563
033R	406615.338267	731046.365441	7.245457
034A	400468.299470	728211.112179	6.948608
034M	400340.417964	728187.450306	6.693964
034R	400158.705540	728154.494898	6.367335
035A	389876.746276	728435.682242	8.483406
035M	389988.688071	728449.394548	8.725601
035R	390067.754755	728384.236850	9.834506
036A	380483.116410	725870.075548	8.353176
036M	380353.795717	725976.478600	8.214464
036R	380436.719463	726152.115217	7.430464
037A	370878.529458	722887.906067	7.253039
037M	370995.610081	722897.903968	7.228534
037R	371119.204545	722880.586502	9.484945
038A	364471.515674	728407.872289	9.908884
038M	364593.122175	728431.701534	10.344810
038R	364703.486714	728454.104125	10.226240
039A	357814.898118	733622.024056	13.474462
039M	357804.970212	733566.905170	21.370807
039R	357764.337173	733565.962953	15.298234
040A	350939.280533	741112.090790	28.815184
040M	351050.719796	741097.271034	28.138446
040R	351156.886309	741075.645761	26.589130
046A	305465.488861	721414.041864	12.020316
046M	305435.407692	721347.597917	12.335752
046R	305384.182999	721235.542640	12.319735
047A	302140.533266	714831.823297	16.043711
047M	302052.221948	714779.810428	16.742539
047R	302262.092124	714938.246605	14.809401
048A	300073.100568	703565.933168	15.268148
048M	300096.102418	703693.586720	14.813731
048R	300038.826174	703467.485306	14.887617
051A	346082.974960	731673.721115	9.749772
051M	346209.514177	731848.182271	9.559088
051R	345970.792325	731512.403175	9.278782
055A	318131.211899	720311.381190	11.909009
055M	318085.789237	720216.316248	12.310315
055R	318045.075452	720127.257455	12.427908
056A	310023.558911	709292.092168	12.899721
056M	309970.819921	709111.648859	13.112181
056R	309916.707567	708889.371852	13.141580
057A	305368.191085	698570.177183	18.195458

057M	305333.894408	698489.777982	18.763277
057R	305399.815670	698649.300406	18.245016
BRAI	422983.854411	733381.496853	37.631743
COST	302359.677556	792631.177742	11.478105
CRNV	320346.539019	741803.615609	26.666613
HAR1	358592.432568	734508.652214	36.842390
INSU	382376.974814	705636.918492	40.864397
ISTR	348192.970288	794829.425707	28.808272
LEHL	328628.119092	647464.435370	62.986242
SLOB	343194.540450	688026.243542	38.227119
TLCA	415729.211380	798803.374775	15.423574

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot3a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot3a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = -38.167140126228297
p2 = -0.000174017892050
p3 = 0.000271144541102
p4 = -0.000000000773982
p5 = 0.000000000331590
p6 = -0.000000000185944
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -10279.999172456601000
dty = -19990.670227050799000
dtz = 19187.741943359400000
da = 1026.762740650159900 cc
db = -957.872216682598950 cc
dg = -466.257921729522930 cc
dm = 4153.348520048890400 ppm
e12 = 0.001266142604436
e13 = -0.000386351595807
e23 = 0.000603611597526
t12 = -0.000001570864697
t21 = -0.003133868929581

042A	326893.423416	745399.552996	24.894329	0.047416	-0.029004	0.003329
042M	326853.651320	745289.239574	28.426055	0.030320	-0.019426	0.003055
042R	326952.670845	745499.375169	24.583365	0.050845	-0.030831	0.003365
043A	321026.703026	741325.717958	16.280752	-0.023974	-0.014042	0.008752
043M	321082.029635	741239.952091	17.822977	-0.031365	-0.008909	0.008977
043R	321022.007391	741236.517377	16.553925	-0.026609	-0.011623	0.008925
044A	313450.486192	738342.337615	10.493133	-0.049808	0.000615	-0.005867
044M	313522.284260	738381.869276	10.531242	-0.049740	0.000276	-0.005758
044R	313355.052068	738284.389921	10.650028	-0.050932	0.001921	-0.006972
045A	308828.808207	728836.854301	11.259946	-0.030793	0.098301	-0.009054
045M	308804.417291	728781.568020	11.471205	-0.030709	0.099020	-0.008795
045R	308778.816368	728732.160050	11.521257	-0.030632	0.099050	-0.008743
046A	305465.325697	721414.109714	12.020224	0.063697	0.022714	-0.000776
046M	305435.243057	721347.666493	12.335732	0.063057	0.023493	-0.001268
046R	305384.018144	721235.611241	12.319841	0.064144	0.021241	-0.001159
047A	302140.355135	714831.889229	16.050036	0.094135	-0.046771	0.012036
047M	302052.041540	714779.876617	16.748739	0.091540	-0.046383	0.011739
047R	302261.918282	714938.311378	14.815820	0.097282	-0.048622	0.011820
048A	300072.974563	703566.005399	15.286096	-0.031437	-0.051601	0.026096
048M	300095.977256	703693.658116	14.831634	-0.029744	-0.053884	0.026634
048R	300038.702666	703467.556287	14.905583	-0.029334	-0.050713	0.026583
049A	295499.933383	698319.258923	19.259602	-0.031617	-0.007077	0.005602
049M	295444.365022	698329.790310	24.037792	-0.050978	0.003310	0.004792
049R	295348.332408	698343.776558	21.473622	-0.039592	-0.002442	0.003622
050A	292813.768878	688129.672142	30.428480	0.000878	-0.021858	-0.021520
050M	292777.306134	688253.348229	29.983009	0.001134	-0.022771	-0.021991
050R	292925.471417	687868.769549	31.434937	-0.000583	-0.020451	-0.021063
056A	310023.363880	709292.308047	12.888948	-0.009120	-0.012953	-0.026052
056M	309970.624652	709111.865130	13.101606	-0.011348	-0.012870	-0.025394
056R	309916.512967	708889.588251	13.131174	-0.012033	-0.014749	-0.025826
057A	305368.058191	698570.354869	18.205122	-0.054809	0.003869	0.005122
057M	305333.760140	698489.956362	18.773037	-0.056860	0.006362	0.005037
057R	305399.681646	698649.478691	18.254583	-0.055354	0.003691	0.004583
058A	301495.686427	686644.630430	16.119995	0.048427	0.055430	0.011995
058M	301425.435516	686701.117402	15.254752	0.052516	0.053402	0.011752
058R	301547.965454	686603.798530	17.314138	0.044454	0.058530	0.011138
023A	439613.444124	749900.434078	-3.428987			
023M	439679.862301	749911.934497	-4.401460			
023R	439726.294551	749987.978201	-3.880065			

024A	441653.991334	739852.111735	-4.322473
024M	441582.320873	739770.377267	-4.260660
024R	441533.840528	739715.803941	-4.370827
025A	432930.086201	737731.093695	-4.038463
025M	433025.138970	737749.640531	-3.054782
025R	432799.897116	737727.408619	-3.894672
026A	423153.756343	733893.123373	-0.313830
026M	423261.760892	733952.781327	-0.356584
026R	423344.573425	733965.201300	-0.825762
027A	419793.297201	746077.502225	-1.010185
027M	419908.606967	746071.672785	-0.994900
027R	420012.419252	746086.621182	-1.790311
028A	406467.528323	750156.736810	1.059627
028M	406563.910422	750096.926879	1.228656
028R	406686.600773	750022.237564	0.659618
029A	394443.545325	747285.576600	3.436914
029M	394333.139952	747276.664187	3.560809
029R	394274.635035	747275.291312	3.411100
030A	382130.558040	747918.295214	6.495103
030M	382208.150869	747787.428632	6.313334
030R	382226.647639	747980.788652	7.920795
031A	369671.850142	743265.977716	5.244009
031M	369560.419090	743236.790469	5.879346
031R	369382.534079	743181.900323	5.460613
032A	414385.929503	731188.412995	1.979726
032M	414316.825132	731091.590715	2.175227
032R	414421.425727	731123.917164	1.578807
033A	406729.727618	731132.286672	1.465814
033M	406644.637682	731114.198958	1.199859
033R	406618.066509	731046.264917	0.186387
034A	400470.642068	728211.145502	0.715921
034M	400342.754192	728187.485341	0.480207
034R	400161.032599	728154.532427	0.180455
035A	389878.524299	728435.864808	3.821598
035M	389990.470770	728449.576129	4.049499
035R	390069.536219	728384.420552	5.144023
036A	380484.436996	725870.382962	4.731691
036M	380355.112084	725976.785845	4.612754
036R	380438.044009	726152.418319	3.827369
037A	370879.447423	722888.308685	4.527779
037M	370996.532564	722898.305779	4.492256
037R	371120.122280	722880.992645	6.735863
038A	364472.239339	728408.257302	7.950161
038M	364593.848297	728432.086815	8.377130
038R	364704.217192	728454.488521	8.250462
039A	357815.458738	733622.373158	12.173527
039M	357805.497441	733567.272085	20.068357
039R	357764.888147	733566.316758	13.998601
040A	350939.708612	741112.372118	28.127288
040M	351051.153105	741097.551239	27.445035
040R	351157.328191	741075.923040	25.890247
041A	337293.021012	746290.711050	34.211555
041M	337310.148573	746245.473767	33.875225
041R	337270.962053	746326.027709	32.724794
051A	346083.234540	731674.076188	9.032928
051M	346209.779229	731848.535249	8.840542
051R	345971.049629	731512.758781	8.563331
052A	339860.138619	730228.293773	21.004750
052M	339742.145555	730285.726478	19.252444
052R	339803.356242	730398.782247	19.390958
053A	331697.733527	732955.361083	9.824307
053M	331560.304045	732925.552907	11.847314
053R	331419.161377	732890.831284	9.842105
054A	323985.967169	727268.168596	12.591912
054M	323955.462448	727243.314944	13.346391
054R	323841.178101	727201.245891	12.440363
055A	318131.033108	720311.640461	11.841232

055M	318085.608258	720216.576569	12.242729
055R	318044.893496	720127.518219	12.360484
BRAI	422987.559065	733381.095566	27.593880
CALR	303238.213559	685014.973947	37.842389
COST	302361.513016	792629.749512	10.364596
CRNV	320346.546428	741803.687798	26.676711
HAR1	358592.931293	734509.039948	35.520283
INSU	382378.220727	705637.404590	36.243435
ISTR	348195.194934	794828.419689	30.054878
LEHL	328629.191543	647464.586170	62.786570
SLOB	343194.734197	688026.836071	37.076355
TLCA	415734.677982	798801.574769	15.036914

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot4 Est - 59-82a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 59-82a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = -343.248802185058990
p2 = -0.001318681985140
p3 = 0.001215394120663
p4 = -0.000000007091856
p5 = 0.000000003351140
p6 = -0.000000002901534
p7 = 0.000000000000005
p8 = 0.000000000000004
p9 = -0.000000000000005
p10 = 0.000000000000002
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = 878.305042048029010
dty = 2566.710655212400100
dtz = -1679.287521362299900
da = -109.335417150946980 cc
db = 91.836163752467399 cc
dg = 61.029308569652301 cc
dm = -450.863319201743930 ppm
e12 = -0.000148533758875
e13 = 0.000044009194426
e23 = -0.000092973678006
t12 = 0.000016041811250
t21 = 0.000320694964103

BUCU	329976.856402	589696.642503	107.801546	-0.000598	0.031503	0.019546
CALR	303238.320505	685014.851167	37.878485	0.097505	0.016167	0.036485
LEHL	328628.160543	647464.484872	64.590088	0.033543	0.008872	0.022088
059A	295231.695914	682024.091276	15.544028	0.027914	0.023276	0.025028
059M	295266.793363	682094.634296	16.703891	0.028363	0.023296	0.025891
059R	295199.305660	681950.961319	15.892544	0.027660	0.022319	0.024544
060A	296376.560777	670247.592713	18.311177	-0.068223	-0.032287	0.001177
060M	296281.754471	670212.807797	19.926268	-0.067529	-0.033203	0.001268
060R	296282.953638	670322.118060	19.671856	-0.068362	-0.033940	0.000856
061A	296859.686449	663940.314205	18.521456	-0.053551	-0.031795	0.017456
061M	296843.740129	663836.929252	18.240843	-0.052871	-0.031748	0.016843
061R	296873.764669	664049.002396	17.141713	-0.054331	-0.031604	0.017713
062A	295586.725954	657668.937731	19.617727	-0.017046	-0.027269	0.018727
062M	295460.604810	657812.204736	19.603028	-0.017190	-0.027264	0.017028
062R	295534.143435	657724.463273	19.488118	-0.017565	-0.026727	0.018118
063A	293445.856951	648025.574507	15.842314	0.000951	-0.004493	0.027314
063M	293341.368768	647923.347989	15.443556	0.001768	-0.004011	0.026556
063R	293395.505341	647973.538138	15.253788	0.001341	-0.003862	0.026788
064A	288224.112654	638630.334998	19.952456	0.041654	0.058998	0.017456
064M	288162.759150	638581.682959	20.288692	0.042150	0.058959	0.016692
064R	288297.519766	638681.427929	18.784019	0.040766	0.058929	0.018019
065A	286245.403782	631452.085166	20.247419	0.070782	0.078166	0.021419
065M	286255.609512	631510.636384	20.437439	0.070512	0.078384	0.021439
065R	286236.344694	631392.569237	20.423351	0.070694	0.078237	0.021351
066A	285807.667740	623041.886154	15.298991	0.046740	0.047154	0.036991
066M	285791.060155	622955.471380	16.383755	0.046155	0.046380	0.036755
066R	285825.331850	623130.281908	15.599844	0.046850	0.047908	0.036844
067A	283725.695256	613931.820913	17.819864	-0.036744	-0.043087	0.015864
067M	283709.900681	614055.340382	17.785035	-0.035319	-0.041618	0.015035
067R	283715.674889	614005.675172	17.499643	-0.036111	-0.041828	0.015643
068A	282535.524160	605370.562131	18.341808	-0.085840	-0.098869	0.009808
068M	282555.187456	605445.238334	18.517791	-0.085544	-0.097666	0.009791
068R	282518.499749	605305.473578	18.154410	-0.086251	-0.098422	0.009410
069A	279723.322986	599683.070147	18.525552	-0.013014	-0.061853	-0.012448

069M	279731.578661	599605.041611	17.802916	-0.012339	-0.061389	-0.011084
069R	279740.297636	599513.911923	17.417962	-0.012364	-0.061077	-0.011038
070A	276257.505744	589255.978714	18.760079	0.034744	0.029714	0.043079
070M	276157.938576	589141.163106	18.932894	0.033576	0.031106	0.042894
070R	276091.053656	589070.510418	18.335445	0.033656	0.031418	0.042445
071A	272714.078032	586811.415650	23.178808	0.006032	0.042650	0.007808
071M	272733.330207	586881.009711	22.646036	0.007207	0.042711	0.007036
071R	272741.160991	586714.415662	21.497134	0.004991	0.042662	0.011134
072A	263795.323786	577697.557001	21.462571			
072M	263796.356526	577618.737776	20.996067			
072R	263856.734078	577719.766661	20.847138			
073A	257196.587191	572261.490241	18.120650			
073M	257132.983076	572201.116933	17.314275			
073R	257075.410305	572149.303044	17.433655			
074A	250201.516837	564537.284931	19.131433			
074M	250311.399016	564631.729306	19.016978			
074R	250400.090046	564710.950315	19.302507			
075A	244542.416598	556879.730085	20.469477			
075M	244534.100249	556804.991317	20.501724			
075R	244530.727198	556715.280641	20.624356			
076A	240498.512194	547015.978722	18.776928			
076M	240456.087653	546943.147763	18.389065			
076R	240411.689966	546868.660086	18.129583			
077A	238244.029363	537054.568651	19.039322			
077M	238197.350245	536955.863991	19.382618			
077R	238143.078848	536864.842369	19.106669			
078A	236744.200822	531196.383374	19.770641			
078M	236806.919817	531093.184251	19.957285			
078R	236853.953697	531021.337687	19.738347			
079A	242136.431339	522550.703412	20.126438			
079M	242188.434898	522459.358289	20.143429			
079R	242238.703234	522372.967204	19.920753			
080A	244729.576813	515630.725918	24.216573			
080M	244666.486064	515583.915999	24.041657			
080R	244617.959635	515541.786385	23.548639			
081A	243798.953973	507345.261694	21.144682			
081M	243866.809783	507260.063125	21.395350			
081R	243936.955503	507189.545451	20.726018			
082A	247812.922192	502014.655674	21.202749			
082M	247860.189738	501885.091991	25.464355			
082R	247872.981476	501982.672367	20.595052			
ALXR	274512.929636	526333.278239	75.161743			
CORA	252901.748016	460039.441584	51.898673			
CRNV	320346.427435	741803.848462	28.371571			
GIUR	265622.153053	577409.185162	39.050757			
SLOB	343194.513511	688026.371118	38.670860			

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot4 Est - 59-82a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 59-82a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 177.231218516827000
p2 = -0.000069309770083
p3 = -0.001038247792962
p4 = 0.000000000928577
p5 = 0.000000001102878
p6 = -0.000000000315713
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -13987.697326432501000
dty = 1857.241424560550100
dtz = 12718.983581543000000
da = 139.875026001079990 cc
db = -890.841478242670970 cc
dg = 269.895570489588010 cc
dm = 1681.490102782850000 ppm
e12 = 0.000252470812484
e13 = 0.000118967454910
e23 = -0.000408233203868
t12 = 0.000509443513693
t21 = -0.001282354758587

072A	263795.663311	577697.620140	21.551806	0.055311	0.011140	0.004806
072M	263796.696676	577618.801024	21.086176	0.054676	0.011024	0.007176
072R	263857.075766	577719.830335	20.935975	0.057766	0.012335	0.006975
073A	257196.897274	572261.550687	18.404757	-0.064726	-0.047313	-0.025243
073M	257133.295408	572201.178061	17.601545	-0.061592	-0.045939	-0.025455
073R	257075.722041	572149.364050	17.723751	-0.060959	-0.045950	-0.025249
074A	250201.811150	564537.345234	19.924011	0.006150	0.017234	0.013011
074M	250311.693362	564631.789528	19.799820	0.005362	0.016528	0.011820
074R	250400.383257	564711.010145	20.077477	0.003257	0.015145	0.011477
075A	244542.734109	556879.799257	21.926980	0.012109	0.060257	0.036980
075M	244534.417705	556805.060423	21.961876	0.011705	0.060423	0.036876
075R	244531.044268	556715.349567	22.087001	0.010268	0.060567	0.036001
076A	240498.896154	547016.064643	20.956706	-0.052846	0.000643	-0.009294
076M	240456.473626	546943.234258	20.576337	-0.052374	0.000258	-0.009663
076R	240412.077584	546868.747052	20.324665	-0.051416	0.000052	-0.009335
077A	238244.507047	537054.676193	21.804622	-0.023953	-0.052807	-0.032378
077M	238197.828347	536955.971641	22.157690	-0.023653	-0.053359	-0.031310
077R	238143.559336	536864.950701	21.892466	-0.021664	-0.052299	-0.030534
078A	236744.757856	531196.510762	22.937294	0.020856	-0.043238	0.006294
078M	236807.476697	531093.311411	23.116777	0.020697	-0.043589	0.005777
078R	236854.511521	531021.464981	22.892315	0.021521	-0.042019	0.005315
079A	242137.046293	522550.831577	22.717472	0.038293	0.025577	-0.010528
079M	242189.050744	522459.486549	22.729624	0.038744	0.025549	-0.011376
079R	242239.320663	522373.095762	22.502228	0.039663	0.026762	-0.010772
080A	244730.277729	515630.868583	26.644492	0.041729	0.044583	-0.005508
080M	244667.189036	515584.059304	26.479236	0.042036	0.044304	-0.004764
080R	244618.665433	515541.930530	25.993838	0.043433	0.043530	-0.003162
081A	243799.853031	507345.454918	23.948938	0.024031	-0.010082	0.068938
081M	243867.709417	507260.256336	24.192819	0.022417	-0.011664	0.067819
081R	243937.858226	507189.739368	23.515926	0.023226	-0.011632	0.065926
082A	247813.918972	502014.865874	23.653276	-0.061028	-0.002126	-0.041724
082M	247861.176220	501885.299095	27.913434	-0.072780	-0.005905	-0.044566
082R	247873.980528	501982.883092	23.039293	-0.059472	-0.000908	-0.043707
ALXR	274513.226410	526333.269465	75.585766	-0.023590	-0.036535	0.011766
059A	295236.067496	682025.331695	16.325145			
059M	295271.166210	682095.875075	17.488831			
059R	295203.671141	681952.200005	16.670533			
060A	296380.248172	670248.628522	19.924991			

060M	296285.433364	670213.841324	21.521397
060R	296286.639466	670323.153633	21.262762
061A	296863.037621	663941.249127	20.467083
061M	296847.086459	663837.862747	20.186620
061R	296877.126136	664049.940293	19.086709
062A	295589.731673	657669.771894	21.501196
062M	295463.615766	657813.040692	21.458433
062R	295537.151512	657725.298230	21.360013
063A	293448.385118	648026.269123	17.569139
063M	293343.892075	647924.041309	17.154518
063R	293398.032280	647974.232441	16.973038
064A	288226.157538	638630.893378	21.032717
064M	288164.800285	638582.240335	21.360893
064R	288299.571248	638681.988102	19.874110
065A	286247.147423	631452.555518	21.176308
065M	286257.354833	631511.107244	21.366756
065R	286238.085489	631393.038750	21.351964
066A	285809.128847	623042.270325	16.278732
066M	285792.514856	622955.853694	17.362305
066R	285826.795107	623130.666734	16.580833
067A	283726.848639	613932.113721	18.639438
067M	283711.057526	614055.634296	18.602183
067R	283716.831272	614005.968905	18.317719
068A	282536.439950	605370.782450	19.085473
068M	282556.104680	605445.459090	19.263007
068R	282519.414398	605305.693547	18.896736
069A	279724.085007	599683.246579	19.053128
069M	279732.341341	599605.218150	18.331399
069R	279741.059646	599514.088183	17.947417
070A	276258.046832	589256.089288	19.094101
070M	276158.476657	589141.272887	19.261887
070R	276091.592061	589070.620334	18.661089
071A	272714.548570	586811.509704	23.357588
071M	272733.803547	586881.104587	22.825210
071R	272741.635449	586714.510701	21.677534
BUCU	329978.155408	589696.884570	115.332097
CALR	303242.946991	685016.153538	40.406743
CORA	252904.145096	460040.005259	55.862519
CRNV	320355.867328	741806.527475	31.746638
GIUR	265622.435293	577409.229035	39.143639
LEHL	328631.322119	647465.303349	73.723118
SLOB	343200.489382	688027.994567	52.417670

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot4 Est - 83-111a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 83-111a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 10.735877871513400
p2 = -0.000129552580631
p3 = 0.000142867422255
p4 = 0.000000000295831
p5 = -0.000000000546023
p6 = 0.000000000032470
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -7168.933439697079800
dty = -6499.966140747070300
dtz = 9952.498260498050500
da = 373.615387250029980 cc
db = -570.535491994129980 cc
dg = -121.277931823251000 cc
dm = 1813.389539165659900 ppm
e12 = 0.000508169920522
e13 = -0.000113489293653
e23 = 0.000123182108067
t12 = 0.000146616140000
t21 = -0.001379946224915

083A	245953.079331	491250.924333	27.410716	0.053331	-0.027667	0.050716
083M	245911.844162	491194.153107	27.331766	0.052162	-0.026893	0.049766
083R	245974.293448	491170.874299	27.127275	0.051448	-0.027701	0.050275
084A	246551.037302	483223.392500	25.444365	-0.076698	0.020500	-0.037635
084M	246467.955789	483243.634046	27.402405	-0.080211	0.023046	-0.038595
084R	246421.821985	483167.887608	27.400186	-0.079015	0.023608	-0.039814
085A	249923.030329	471564.181590	40.745063	-0.008671	-0.024410	-0.060937
085M	249961.662579	471502.346838	41.003057	-0.009421	-0.024162	-0.059943
085R	250007.880739	471427.742643	39.758654	-0.006261	-0.025357	-0.059346
086A	252516.592570	461277.558416	26.986958	0.031570	0.004416	0.022958
086M	252525.319795	461145.442662	27.981216	0.027795	0.004662	0.024216
086R	252515.303165	461429.530775	26.883097	0.033165	0.004775	0.022097
087A	248286.362176	451477.350079	24.552884	0.018176	0.034079	0.005884
087M	248369.125237	451555.398953	24.819235	0.017237	0.033953	0.007235
087R	248426.932053	451610.237260	25.097975	0.017053	0.034260	0.007975
088A	245304.927625	442995.578974	26.506623	0.017625	0.052974	-0.003377
088M	245328.338487	443117.887255	27.162553	0.016487	0.053255	-0.003447
088R	245344.417361	443198.889692	26.436486	0.018361	0.052692	-0.003514
089A	244144.075115	432340.204353	26.582641	0.005115	0.025353	-0.011359
089M	244096.473382	432439.507530	26.403249	0.006382	0.026530	-0.011751
089R	244036.735170	432547.433657	25.980268	0.008170	0.028657	-0.012732
090A	249414.728769	421286.016184	27.795858	-0.005231	-0.092816	0.042858
090M	249391.267639	421392.248919	27.949350	-0.006361	-0.092081	0.043350
090R	249374.695412	421498.805950	27.713579	-0.005588	-0.093050	0.043579
091A	250807.188343	416066.464330	27.921688	-0.004657	-0.063670	0.024688
091M	250820.996779	415970.989110	28.250881	-0.006221	-0.062890	0.022881
091R	250794.800725	416172.359399	27.657790	-0.003275	-0.064601	0.024790
092A	252557.537994	407884.153139	28.552118	-0.028006	0.017139	-0.049882
092M	252591.955087	407937.596562	31.531751	-0.032913	0.017562	-0.048249
092R	252584.544450	407811.838887	28.579076	-0.027550	0.017887	-0.050924
093A	257562.905812	397449.169853	27.286167	0.015812	0.046853	0.004167
093M	257581.377694	397342.155580	27.265435	0.016694	0.046580	0.003435
093R	257597.786051	397243.347092	26.799484	0.019051	0.047092	0.002484
CORA	252902.699262	460039.375929	57.171275	-0.048738	0.011929	0.040275
080A	244731.548889	515630.855788	26.864217			
080M	244668.457991	515584.046902	26.696889			
080R	244619.932192	515541.917821	26.209790			
081A	243800.735998	507345.417030	24.030337			

081M	243868.588447	507260.217585	24.275699
081R	243938.733456	507189.698285	23.600548
082A	247814.544471	502014.745721	23.853275
082M	247861.798043	501885.184483	28.115186
082R	247874.604054	501982.760922	23.241639
094A	257780.551166	385413.293356	30.087749
094M	257804.600108	385309.273725	30.790023
094R	257824.247526	385221.612583	30.524594
095A	261005.328029	380690.235847	30.680803
095M	260956.957985	380767.810278	31.192878
095R	260905.892872	380851.935399	31.379910
096A	263131.585074	370765.367408	30.816426
096M	263145.291538	370665.343799	31.131242
096R	263161.409576	370569.715545	30.854462
097A	263576.604569	362301.926150	31.477063
097M	263583.710851	362407.045166	31.436430
097R	263589.822754	362516.929350	31.606931
098A	258983.907447	349514.863827	31.258002
098M	259041.012784	349666.427753	31.505014
098R	259001.521497	349585.859128	30.929429
099A	259065.159216	339759.607000	35.639364
099M	258979.456169	339675.292243	34.768183
099R	259187.238685	339821.748714	34.308046
100A	261470.507807	332194.681263	35.000248
100M	261506.557992	332151.948448	37.892952
100R	261534.827555	332079.195612	37.756855
101A	266193.241160	327521.757220	39.781976
101M	266204.661766	327464.441115	36.426834
101R	266294.323735	327478.427433	33.513757
102A	270799.356702	328379.668713	35.328999
102M	270891.145327	328436.511168	36.833343
102R	270709.687997	328324.836921	35.738025
103A	279667.290199	334331.476186	43.579129
103M	279681.289994	334371.794104	41.951506
103R	279693.813635	334411.713429	42.103902
104A	281112.162648	341134.444915	42.747270
104M	281189.591068	341225.592572	39.525667
104R	281262.903727	341295.447008	37.442640
105A	289324.231839	342816.663052	38.375079
105M	289404.480695	342767.192116	38.540480
105R	289487.266438	342756.696361	39.124830
106A	292603.304641	333804.978910	38.582774
106M	292797.218130	333574.546268	38.049564
106R	292686.434177	333704.427403	37.174691
107A	297210.394341	326629.176291	42.343990
107M	297198.325831	326681.082936	42.081285
107R	297231.930890	326536.608964	42.313934
108A	303178.925947	319770.031306	46.870593
108M	303207.113811	319674.624733	47.143858
108R	303231.836452	319589.580814	48.766664
109A	309711.708946	315751.159600	45.724052
109M	309718.495710	315649.252450	44.076916
109R	309790.963540	315715.588611	46.041949
110A	315026.052781	308079.493367	50.681500
110M	315146.385711	308020.547232	50.239346
110R	315231.691341	307958.392344	48.709592
111A	322268.688878	302005.143269	54.992448
111M	322368.976016	301970.321335	55.373667
111R	322439.350259	301948.705629	55.536276
ALXR	274514.944235	526332.860455	75.556912
BAIS	281645.548460	367068.408662	76.150724
CRAI	316112.489047	401598.763209	107.177452
DRTS	350253.695483	312435.912334	103.358499
GIUR	265626.356675	577408.600221	39.695734

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot4 Est - 83-111a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 83-111a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = -21.893741607666001
p2 = -0.000464947782348
p3 = 0.000032352218767
p4 = 0.000000000110008
p5 = -0.000000000283049
p6 = -0.000000000517792
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = -254.201782713644010
dty = -15772.447814941401000
dtz = 7096.176269531250000
da = 656.846669217597880 cc
db = -235.272975152332010 cc
dg = -523.888624831899050 cc
dm = 1930.044469190759900 ppm
e12 = 0.000830076314742
e13 = -0.000342578830896
e23 = 0.000704458378975
t12 = -0.000224152846386
t21 = -0.001470295683248

094A	257780.247207	385413.169073	30.274055	-0.036793	-0.033927	0.031055
094M	257804.295486	385309.152988	30.975989	-0.034514	-0.030012	0.030989
094R	257823.941853	385221.493292	30.710317	-0.032147	-0.029708	0.031317
095A	261004.957750	380690.266155	30.609104	0.049750	0.047155	-0.033896
095M	260956.589085	380767.839161	31.125226	0.048085	0.047161	-0.032774
095R	260905.525240	380851.962113	31.316482	0.047240	0.047113	-0.032518
096A	263131.104656	370765.583617	30.602988	0.069656	0.071617	-0.020012
096M	263144.810208	370665.562110	30.916615	0.068208	0.071110	-0.020385
096R	263160.927013	370569.934906	30.638347	0.067013	0.068906	-0.019653
097A	263576.034656	362302.247170	31.201984	-0.092344	-0.100830	0.006984
097M	263583.141966	362407.365247	31.161183	-0.089034	-0.097753	0.007183
097R	263589.255076	362517.248795	31.331645	-0.085924	-0.093205	0.006645
101A	266192.231656	327522.326631	38.304306	-0.065344	-0.037369	0.005306
101M	266203.649438	327465.004821	34.945168	-0.059562	-0.043179	0.005168
101R	266293.309143	327478.987992	32.021632	-0.053857	-0.047008	0.005632
102A	270798.315805	328380.331945	33.316729	0.032805	0.051945	-0.014271
102M	270890.105247	328437.179029	34.812155	0.032247	0.055029	-0.014845
102R	270708.647396	328325.498974	33.734491	0.030396	0.051974	-0.014509
103A	279666.250148	334332.326617	40.706641	0.099148	0.066617	0.005641
103M	279680.249393	334372.641823	39.078904	0.101393	0.062823	0.005904
103R	279692.773523	334412.561576	39.231355	0.100523	0.062576	0.005355
104A	281111.194882	341135.300929	39.948939	0.012882	-0.004071	0.010939
104M	281188.621807	341226.443935	36.720708	0.014807	-0.011065	0.010708
104R	281261.933403	341296.295750	34.630839	0.015403	-0.016250	0.010839
105A	289323.197662	342817.647687	34.591502	-0.085338	-0.002313	0.012502
105M	289403.445145	342768.178569	34.744894	-0.085855	-0.002431	0.012894
105R	289486.230209	342757.685246	35.318253	-0.088791	-0.001754	0.013253
106A	292602.120152	333806.043848	34.012640	0.007152	-0.029152	-0.018360
106M	292796.028165	333575.613651	33.443344	0.011165	-0.032349	-0.020656
106R	292685.246636	333705.491296	32.589017	0.010636	-0.032704	-0.019983
080A	244731.669794	515625.891191	15.762022			
080M	244668.579369	515579.082636	15.606751			
080R	244620.053747	515536.953494	15.129947			
081A	243800.886053	507340.846039	14.359003			
081M	243868.738427	507255.653293	14.613509			
081R	243938.882773	507185.138381	13.944938			
082A	247814.680335	502010.553324	14.744613			
082M	247861.936326	501881.007310	19.023300			

082R	247874.739220	501978.570684	14.133655
083A	245953.247401	491247.194075	20.026606
083M	245912.012527	491190.424125	19.958698
083R	245974.461304	491167.147806	19.752992
084A	246551.206478	483220.034145	19.120285
084M	246468.126648	483240.275929	21.081908
084R	246421.993185	483164.531470	21.093200
085A	249923.183766	471561.433265	35.631245
085M	249961.815852	471499.602524	35.893551
085R	250008.032917	471425.000386	34.654318
086A	252516.707973	461275.255499	22.824232
086M	252525.435499	461143.146688	23.831901
086R	252515.418756	461427.221951	22.704230
087A	248286.486330	451475.280442	21.740950
087M	248369.249165	451553.329393	21.992802
087R	248427.055877	451608.167904	22.261383
088A	245305.048885	442993.712494	24.732166
088M	245328.460367	443116.018660	25.375314
088R	245344.538975	443197.017644	24.640694
089A	244144.164395	432338.633081	25.787774
089M	244096.563287	432437.931638	25.604904
089R	244036.825673	432545.852101	25.178819
090A	249414.730938	421284.903879	27.300460
090M	249391.270614	421391.133447	27.449414
090R	249374.698921	421497.686797	27.208428
091A	250807.152265	416065.523730	27.609447
091M	250820.960250	415970.051839	27.942771
091R	250794.765185	416171.415363	27.340681
092A	252557.440043	407883.454563	28.498778
092M	252591.858952	407936.903003	31.472594
092R	252584.445852	407811.142709	28.526533
093A	257562.697296	397448.819063	27.161571
093M	257581.168232	397341.807319	27.142634
093R	257597.575461	397243.000351	26.678386
098A	258983.232287	349515.176215	31.347227
098M	259040.339089	349666.741046	31.590532
098R	259000.846839	349586.170924	31.017970
099A	259064.367292	339759.977038	35.481212
099M	258978.663358	339675.658902	34.617614
099R	259186.445804	339822.119186	34.137361
100A	261469.598202	332195.127799	34.296002
100M	261505.649197	332152.401063	37.182690
100R	261533.917483	332079.648769	37.040353
107A	297209.063662	326630.321829	36.799430
107M	297196.995854	326682.227844	36.541187
107R	297230.598669	326537.754736	36.761407
108A	303177.431280	319771.256224	40.099540
108M	303205.617588	319675.850287	40.362793
108R	303230.339643	319590.809383	41.976720
109A	309710.074801	315752.446820	37.760942
109M	309716.859020	315650.536481	36.105723
109R	309789.328057	315716.877118	38.065004
110A	315024.237319	308080.808705	41.373557
110M	315144.567510	308021.862555	40.908986
110R	315229.870179	307959.705378	39.361712
111A	322266.683290	302006.486813	44.092542
111M	322366.968715	301971.666014	44.455480
111R	322437.341739	301950.050936	44.605507
112A	333411.786739	298192.466841	41.209476
112M	333502.693503	298254.611626	44.596848
112R	333576.745019	298288.598899	44.728993
113A	341204.319010	308253.390159	43.144162
113M	341164.016440	308180.150164	43.336166
113R	341122.401643	308120.543447	43.170831
114A	337355.893789	316656.026858	43.601740
114M	337303.040323	316777.874785	43.295678
114R	337262.900470	316867.455808	43.008896

115A	344059.118483	321845.374233	42.485865
115M	343986.340604	321906.961799	43.004782
115R	344133.917295	321780.426771	41.691389
ALXR	274514.816861	526328.143501	60.547148
BAIS	281644.888110	367069.139031	73.804698
CORA	252902.827284	460037.183136	53.108818
CRAI	316111.744835	401599.469849	100.362568
DRTS	350251.461188	312437.487113	89.007319
GIUR	265625.947821	577400.428378	14.850012

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot4 Est - 83-111a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 83-111a.txt

Coeficienti transformare 3D cu 6 parametri:
p1 = -56.886862277984598
p2 = -0.000420291822593
p3 = 0.000342899806128
p4 = -0.000000000482718
p5 = -0.000000000242519
p6 = -0.000000000467368
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = 85470.094332575798000
dty = -114557.804687500000000
dtz = -35151.542968750000000
da = 3479.115898278249500 cc
db = 4133.652051830020400 cc
dg = -5012.925849047290300 cc
dm = 1671.670470386739900 ppm
e12 = 0.004072083916981
e13 = -0.002801025169902
e23 = 0.007015958557203
t12 = -0.004664802458137
t21 = -0.001265216385946

097A	263576.142854	362302.360198	31.186044	0.015854	0.012198	-0.008956
097M	263583.247550	362407.472150	31.145570	0.016550	0.009150	-0.008430
097R	263589.359774	362517.353480	31.316382	0.018774	0.011480	-0.008618
098A	258983.520145	349515.680926	31.238900	-0.039855	-0.007074	-0.010100
098M	259040.628403	349667.249297	31.483404	-0.037597	0.001297	-0.009596
098R	259001.131547	349586.668481	30.910017	-0.042453	-0.013519	-0.009983
099A	259064.662082	339760.522062	35.368021	0.021082	0.008062	-0.008979
099M	258978.949979	339676.184648	34.502894	0.012979	-0.014352	-0.009106
099R	259186.729288	339822.639615	34.026248	0.013288	-0.017385	-0.008752
100A	261469.763722	332195.422248	34.221781	0.005722	-0.041752	-0.007219
100M	261505.838768	332152.750714	37.109024	0.025768	0.021714	-0.006976
100R	261534.104228	332079.992462	36.967121	0.024228	0.018462	-0.006879
101A	266192.285883	327522.428599	38.286272	-0.011117	0.064599	-0.012728
101M	266203.672855	327465.036943	34.927278	-0.036145	-0.011057	-0.012722
101R	266293.306491	327478.961703	32.004468	-0.056509	-0.073297	-0.011532
102A	270798.281182	328380.277845	33.323815	-0.001818	-0.002155	-0.007185
102M	270890.083393	328437.154804	34.819481	0.010393	0.030804	-0.007519
102R	270708.616622	328325.452826	33.741351	-0.000378	0.005826	-0.007649
103A	279666.192966	334332.299504	40.692988	0.041966	0.039504	-0.008012
103M	279680.178334	334372.583183	39.065099	0.030334	0.004183	-0.007901
103R	279692.704085	334412.506661	39.217480	0.031085	0.007661	-0.008520
104A	281111.170392	341135.346817	39.928818	-0.011608	0.041817	-0.009182
104M	281188.567505	341226.422580	36.699788	-0.039495	-0.032420	-0.010212
104R	281261.859129	341296.229553	34.609198	-0.058871	-0.082447	-0.010802
080A	244712.442533	515581.534418	15.517301			
080M	244649.360278	515534.743867	15.359622			
080R	244600.839224	515492.624688	14.880792			
081A	243783.474656	507300.618681	14.105356			
081M	243851.349077	507215.476842	14.363020			
081R	243921.504284	507144.987433	13.697169			
082A	247798.478724	501973.123993	14.658864			
082M	247845.799785	501843.726482	18.941711			
082R	247858.539860	501941.147133	14.049809			
083A	245939.244186	491214.760144	19.891836			
083M	245898.019120	491158.012168	19.822385			
083R	245960.471697	491134.745160	19.618972			
084A	246538.729693	483191.089832	19.011656			
084M	246455.661867	483211.357995	20.971082			

084R	246409.541737	483135.643509	20.980672
085A	249912.954896	471537.654520	35.641210
085M	249951.600121	471475.854157	35.904817
085R	249997.819498	471401.257904	34.666483
086A	252508.055556	461255.107413	22.893512
086M	252516.812342	461123.065466	23.901578
086R	252506.741753	461407.017655	22.773714
087A	248279.231870	451458.287050	21.654520
087M	248361.986947	451536.319048	21.909475
087R	248419.788989	451591.147420	22.180253
088A	245298.926182	442979.279244	24.517621
088M	245322.327749	443101.562841	25.162198
088R	245338.389697	443182.523950	24.428166
089A	244139.338553	432327.159423	25.497796
089M	244091.723465	432426.425485	25.313335
089R	244031.968509	432534.305666	24.885139
090A	249411.194245	421276.440664	27.160639
090M	249387.724241	421382.647738	27.309254
090R	249371.139512	421489.171032	27.068045
091A	250804.140100	416058.279560	27.494449
091M	250817.960045	415962.835227	27.827931
091R	250791.740644	416164.142683	27.225621
092A	252555.171041	407877.937391	28.405017
092M	252589.611637	407931.435369	31.380661
092R	252582.183252	407805.640545	28.433263
093A	257561.223613	397445.187130	27.151959
093M	257579.701704	397338.192104	27.133020
093R	257596.111643	397239.391704	26.668666
094A	257779.525933	385411.279196	30.227434
094M	257803.585730	385307.289805	30.929635
094R	257823.234342	385219.635630	30.664032
095A	261004.463828	380688.938361	30.606948
095M	260956.096301	380766.513264	31.122600
095R	260905.030471	380850.630962	31.313310
096A	263130.985828	370765.155109	30.602778
096M	263144.697232	370665.147298	30.916351
096R	263160.814575	370569.521716	30.637998
105A	289322.830306	342816.995240	34.458593
105M	289403.075390	342767.521622	34.610398
105R	289485.861800	342757.032251	35.182208
106A	292601.495017	333804.860899	33.800185
106M	292795.384738	333574.391660	33.226175
106R	292684.603398	333704.268263	32.374480
107A	297208.067750	326628.360575	36.464009
107M	297195.999766	326680.265940	36.206112
107R	297229.598730	326535.784765	36.425351
108A	303175.898975	319768.153065	39.570991
108M	303204.082322	319672.740912	39.833277
108R	303228.813730	319587.721756	41.446392
109A	309707.929954	315748.027318	36.971864
109M	309714.695025	315646.073712	35.316394
109R	309787.178728	315712.448328	37.272449
110A	315021.365321	308074.807820	40.341445
110M	315141.678968	308015.825407	39.870839
110R	315226.958247	307953.616026	38.319304
111A	322262.889549	301998.477587	42.672088
111M	322363.167174	301963.640159	43.029106
111R	322433.533978	301942.011705	43.174964
112A	333406.660565	298181.549140	39.056522
112M	333497.591429	298243.749591	42.437046
112R	333571.638663	298277.727804	42.563650
113A	341198.957056	308241.992809	40.362395
113M	341158.656914	308168.758095	40.557838
113R	341117.042296	308109.151497	40.396016
114A	337351.355137	316646.444013	41.123060
114M	337298.509724	316768.309437	40.821069
114R	337258.375379	316857.902371	40.537374

115A	344054.005366	321834.540937	39.457042
115M	343981.242644	321896.162107	39.982301
115R	344128.786265	321769.553623	38.656018
ALXR	274493.403058	526279.099165	60.901214
BAIS	281644.887156	367069.181149	73.843313
CORA	252894.631565	460018.079452	53.198625
CRAI	316108.298736	401591.951736	99.531522
DRTS	350245.617932	312425.077950	85.425143
GIUR	265590.111712	577318.479160	14.571718

Fisier WGS:
C:\Documents and SettingsBornare\ParametriSt70\ETRS89 - Lot4 Est - 83-111a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot4 - 83-111a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 226.765822887421000
p2 = 0.000662478836603
p3 = -0.000434952344222
p4 = 0.000000000154348
p5 = 0.000000001168206
p6 = 0.000000000549019
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = 26313.151393726501000
dty = -32082.962158203100000
dtz = -11777.743896484400000
da = 961.853811759219870 cc
db = 1313.597696517630100 cc
dg = -1433.056563756199900 cc
dm = 121.879245853051980 ppm
e12 = 0.001075153471902
e13 = -0.000838290070533
e23 = 0.002031894897412
t12 = -0.001368418086713
t21 = -0.000099871162092

105A	289323.349642	342817.613875	34.576251	0.066642	-0.036125	-0.002749
105M	289403.598299	342768.148761	34.732950	0.067299	-0.032239	0.000950
105R	289486.387528	342757.661513	35.310697	0.068528	-0.025487	0.005697
106A	292602.040801	333806.073498	34.009348	-0.072199	0.000498	-0.021652
106M	292795.942624	333575.646698	33.446199	-0.074376	0.000698	-0.017801
106R	292685.159847	333705.517565	32.588321	-0.076153	-0.006435	-0.020679
107A	297208.816630	326630.456134	36.934122	-0.064370	0.050134	0.012122
107M	297196.749706	326682.361453	36.675525	-0.065294	0.048453	0.012525
107R	297230.348059	326537.888238	36.896732	-0.064941	0.048238	0.010732
108A	303177.012806	319771.508372	40.416890	0.031806	0.025372	0.003890
108M	303205.196253	319676.102565	40.681294	0.032253	0.025565	0.002294
108R	303229.921270	319591.067397	42.296273	0.036270	0.034397	0.002273
109A	309709.559524	315752.828401	38.232539	0.086524	-0.005599	-0.001461
109M	309716.332228	315650.909129	36.577832	0.080228	-0.018871	-0.002168
109R	309788.813354	315717.261705	38.538190	0.087354	-0.003295	-0.001810
110A	315023.408173	308081.171963	41.977399	-0.053827	-0.089037	-0.017601
110M	315143.734597	308022.225772	41.514454	-0.054403	-0.090228	-0.017546
110R	315229.028617	307960.063000	39.968559	-0.058383	-0.100000	-0.017441
111A	322265.587164	302006.873330	44.804589	0.021164	0.012330	0.003589
111M	322365.872631	301972.055368	45.167973	0.024631	0.017368	0.002973
111R	322436.245424	301950.441939	45.318264	0.026424	0.019939	0.003264
112A	333410.482153	298192.949388	41.928431	0.007153	0.002388	-0.000569
112M	333501.406091	298255.111765	45.314971	0.013091	0.023765	-0.002029
112R	333575.460076	298289.102043	45.446502	0.012076	0.024043	-0.002498
113A	341203.564137	308254.313373	43.976601	-0.021863	0.000373	-0.002399
113M	341163.258657	308181.071592	44.166318	-0.023343	-0.000408	-0.003682
113R	341121.640253	308121.461993	43.999040	-0.025747	-0.003007	-0.003960
080A	244726.134003	515614.663096	37.816089			
080M	244663.043030	515567.854040	37.626522			
080R	244614.516014	515525.723684	37.121333			
081A	243795.900041	507330.379039	33.535791			
081M	243863.763228	507245.200819	33.784165			
081R	243933.913771	507174.695384	33.114501			
082A	247810.281934	502000.900319	33.467936			
082M	247857.566302	501871.387521	37.721734			
082R	247870.343712	501968.922587	32.864413			
083A	245949.458943	491238.411732	35.151069			
083M	245908.225000	491181.643460	35.056538			

083R	245970.677751	491158.372968	34.861193
084A	246547.913299	483211.979416	32.265932
084M	246464.835728	483232.221423	34.211618
084R	246418.704035	483156.479905	34.191532
085A	249920.740825	471554.615636	46.720744
085M	249959.378948	471492.793400	46.977598
085R	250005.597037	471418.195135	45.731563
086A	252514.809970	461269.313229	32.153842
086M	252523.547505	461137.218273	33.134408
086R	252513.513829	461421.268585	32.067114
087A	248284.747577	451469.680373	28.115441
087M	248367.512985	451547.731430	28.399911
087R	248425.321849	451602.571765	28.691363
088A	245303.443610	442988.416866	28.945880
088M	245326.855208	443110.720357	29.614741
088R	245342.929267	443191.712864	28.897214
089A	244142.789611	432333.832210	28.078437
089M	244095.182761	432433.121401	27.901541
089R	244035.437544	432541.030145	27.480482
090A	249413.870916	421281.018278	28.965584
090M	249390.408160	421387.242122	29.124668
090R	249373.832819	421493.788625	28.895002
091A	250806.445453	416061.958268	28.835937
091M	250820.256788	415966.492575	29.159737
091R	250794.055204	416167.843640	28.578224
092A	252556.916809	407880.325212	29.047380
092M	252591.348890	407933.786319	32.032199
092R	252583.924701	407808.017897	29.071292
093A	257562.467038	397446.357755	27.358684
093M	257580.938987	397339.350218	27.332199
093R	257597.345325	397240.545258	26.860896
094A	257780.020145	385411.033238	29.524168
094M	257804.071795	385307.023793	30.221796
094R	257823.717535	385219.366141	29.952409
095A	261004.846807	380688.433839	29.909981
095M	260956.478695	380766.004457	30.425754
095R	260905.414030	380850.123395	30.616775
096A	263130.973861	370764.033137	29.583308
096M	263144.679809	370664.014934	29.893738
096R	263160.794801	370568.388709	29.612699
097A	263575.780421	362300.802818	29.913681
097M	263582.889947	362405.920510	29.876386
097R	263589.006164	362515.804437	30.050437
098A	258982.471103	349513.466909	29.589446
098M	259039.585691	349665.036745	29.835425
098R	259000.087110	349584.461554	29.260853
099A	259063.326244	339758.241571	33.890116
099M	258977.612074	339673.913617	33.024652
099R	259185.407053	339820.386698	32.550518
100A	261468.387063	332193.463658	33.060303
100M	261504.449571	332150.750477	35.950041
100R	261532.715731	332077.998464	35.811653
101A	266191.051614	327520.905948	37.423525
101M	266202.454033	327463.570184	34.067192
101R	266292.106300	327477.547067	31.145856
102A	270797.334420	328379.177320	32.550983
102M	270889.135695	328436.036692	34.047517
102R	270707.662000	328324.340030	32.967667
103A	279665.846162	334331.769481	40.149816
103M	279679.840845	334372.079225	38.522319
103R	279692.367479	334412.000713	38.674980
104A	281111.073297	341134.879081	39.460704
104M	281188.492758	341226.013501	36.237266
104R	281261.800610	341295.861016	34.151845
114A	337355.586955	316657.113460	44.643283
114M	337302.738331	316778.962122	44.340729
114R	337262.601787	316868.543405	44.056504

115A	344059.011099	321846.652344	43.954252
115M	343986.238639	321908.242455	44.474653
115R	344133.803216	321781.701159	43.158137
ALXR	274509.974247	526317.894209	95.729767
BAIS	281645.564855	367068.855981	74.297258
CORA	252901.121361	460031.476603	62.255402
CRAI	316113.452397	401599.968762	109.258263
DRTS	350251.028133	312438.797174	90.117511
GIUR	265615.548549	577383.010644	69.062240

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot5a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot5a.txt

Coeficienti transformare 1D cu 10 parametri:
p1 = 2986.125484466550000
p2 = -0.003406060190173
p3 = -0.027941670356086
p4 = 0.000000092110766
p5 = -0.000000028017560
p6 = 0.000000004262766
p7 = -0.000000000000099
p8 = 0.000000000000036
p9 = 0.000000000000006
p10 = -0.000000000000006
.....
Coeficienti transformare 3D cu 12 parametri:
dtx = 8466.401500555559300
dty = 9476.731124877929700
dtz = -11402.622680664101000
da = -479.489635707603950 cc
db = 679.942236439638010 cc
dg = 189.707911273967990 cc
dm = -2231.802798632999800 ppm
e12 = -0.000674324078318
e13 = 0.000135780375786
e23 = -0.000270716194179
t12 = -0.000156995633461
t21 = 0.001658171102463

114A	337355.400632	316656.689576	44.466075	-0.034368	-0.030424	-0.020925
114M	337302.548085	316778.537320	44.165172	-0.035915	-0.027680	-0.015828
114R	337262.408669	316868.118368	43.882230	-0.037331	-0.025632	-0.011770
115A	344058.530257	321846.228344	43.552680	-0.018743	0.080344	0.034680
115M	343985.756554	321907.812582	44.072882	-0.017446	0.081582	0.035882
115R	344133.323685	321781.285087	42.756816	-0.020315	0.079087	0.033816
116A	349316.940375	311807.844809	47.324346	0.065375	-0.100191	-0.080654
116M	349321.212207	311701.366371	47.188784	0.065207	-0.101629	-0.082216
116R	349325.381169	311631.994540	47.040325	0.065169	-0.102460	-0.082675
117A	355050.632472	305464.071573	46.024722	0.023472	-0.022427	0.030722
117M	355100.320039	305411.773932	46.434868	0.024039	-0.021068	0.031868
117R	355121.229637	305477.968245	46.206561	0.023637	-0.019755	0.033561
118A	360691.071485	296265.937356	99.178673	-0.008515	0.075356	-0.015327
118M	360746.649652	296232.100624	98.207029	-0.012348	0.077624	-0.016971
118R	360836.082623	296216.804458	95.787873	-0.020377	0.081458	-0.018127
119A	357030.499582	290291.935863	76.102134	-0.044418	0.023863	-0.002866
119M	357021.223343	290183.092709	75.122592	-0.047657	0.024709	-0.002408
119R	357024.343667	290128.361886	75.063412	-0.048333	0.024886	-0.002588
120A	354067.237074	285921.359337	84.533982	-0.009926	-0.022663	0.021982
120M	354096.610764	286040.094608	82.591806	-0.014236	-0.021392	0.021806
120R	354087.113897	285804.002527	79.533075	-0.024103	-0.017473	0.024075
121A	345274.709015	280242.095155	75.441017	0.063015	-0.045845	0.013017
121M	345290.209216	280351.838999	76.669845	0.067216	-0.047001	0.011845
121R	345255.825342	280080.493387	76.691664	0.064342	-0.046613	0.013664
122A	335352.780565	273763.848774	78.597111	0.032565	0.107774	0.005111
122M	335367.744663	273659.482514	78.083748	0.028663	0.106514	0.004748
122R	335319.960326	273842.145350	78.928620	0.035326	0.109350	0.006620
123A	339898.306994	267783.965569	83.858138	-0.044006	-0.022431	-0.028862
123M	339786.139533	267852.673038	86.939969	-0.036467	-0.022962	-0.029031
123R	340039.691821	267726.839510	81.386853	-0.050179	-0.022490	-0.028147
124A	346784.205785	264592.744466	74.613718	-0.040215	-0.076534	0.021718
124M	346887.751562	264573.299554	75.764234	-0.036438	-0.076446	0.022234
124R	346947.229185	264578.671689	76.195168	-0.034815	-0.076311	0.023168
125A	353133.736710	259490.518328	70.187908	0.010710	-0.008672	-0.025092
125M	353147.180694	259432.163580	71.325674	0.013694	-0.009420	-0.026326

125R	353178.024488	259366.328874	71.835297	0.015488	-0.009126	-0.027703
126A	354770.343603	254116.229336	71.307181	0.029603	0.016336	-0.061819
126M	354791.416758	254019.697602	71.275318	0.029758	0.016602	-0.060682
126R	354751.346386	254211.613820	71.328033	0.029386	0.015820	-0.061967
127A	355711.659900	247622.395564	72.058438	-0.011100	0.013564	0.039438
127M	355696.484806	247481.046571	71.690629	-0.013194	0.013571	0.044629
127R	355742.231882	247699.397921	72.135125	-0.010118	0.013921	0.036125
112A	333411.052620	298193.096923	41.868569			
112M	333501.973300	298255.233105	45.251414			
112R	333576.024959	298289.221410	45.379726			
113A	341203.642174	308254.155846	43.729533			
113M	341163.340076	308180.914398	43.919965			
113R	341121.724515	308121.307240	43.753373			
128A	356648.322919	238949.040497	72.725375			
128M	356493.732044	239048.098251	72.826135			
128R	356595.316549	239013.340278	73.053855			
129A	359967.026941	236529.377505	88.666530			
129M	359885.890805	236540.975938	87.771568			
129R	360010.757022	236522.404129	89.157091			
130A	367055.018968	231317.074852	73.236798			
130M	367022.332978	231339.766715	72.940159			
130R	366998.932741	231246.610513	71.727506			
131A	370743.060553	219904.577767	73.879166			
131M	370726.894283	219819.399753	72.698391			
131R	370716.039395	219723.280645	72.644838			
132A	374397.620042	214617.075786	71.465450			
132M	374513.485872	214609.850450	72.244227			
132R	374625.437158	214601.874894	71.992804			
BAIS	281644.208401	367069.758819	110.583315			
DRTS	350250.821506	312438.364917	89.829230			
MOLD	364307.602362	232241.839591	92.514911			
RESI	426166.267277	256908.959498	200.596349			
TJIU	395583.722173	364167.896362	228.477244			

Fisier WGS:
C:\Documents and Settings\Bornare\ParametriSt70\ETRS89 - Lot5a.txt
Fisier Puncte Comune:
C:\Documents and Settings\Bornare\ParametriSt70\ST70 TRANSDAT - Lot5a.txt

Coeficienti transformare 1D cu 6 parametri:
p1 = 163.898281097412000
p2 = 0.000364025043382
p3 = -0.000300777901430
p4 = 0.000000000205310
p5 = 0.000000000629054
p6 = 0.000000000275187
.....
Coeficienti transformare 3D cu 10 parametri:
dtx = -3999.118530273439800
dty = 9894.729400634769300
dtz = 145.920802116393990
da = -1507.837438413579800 cc
db = -574.864036834910960 cc
dg = 1377.578575030110000 cc
dm = 1.250300556421280 ppm
e12 = -0.000000000098497
e13 = 0.000000000244076
e23 = 0.000000000003742

123A	339898.352257	267784.071330	83.884525	0.001257	0.083330	-0.002475
123M	339786.178587	267852.782777	86.965655	0.002587	0.086777	-0.003345
123R	340039.741641	267726.940682	81.413437	-0.000359	0.078682	-0.001563
124A	346784.206539	264592.729562	74.615392	-0.039461	-0.091438	0.023392
124M	346887.748882	264573.283334	75.765146	-0.039118	-0.092666	0.023146
124R	346947.225231	264578.654182	76.195485	-0.038769	-0.093818	0.023485
125A	353133.723845	259490.446024	70.220111	-0.002155	-0.080976	0.007111
125M	353147.164870	259432.092904	71.358016	-0.002130	-0.080096	0.006016
125R	353178.007340	259366.259064	71.868057	-0.001660	-0.078936	0.005057
126A	354770.335341	254116.207361	71.338738	0.021341	-0.005639	-0.030262
126M	354791.408867	254019.676512	71.306229	0.021867	-0.004488	-0.029771
126R	354751.337802	254211.590916	71.360259	0.020802	-0.007084	-0.029741
127A	355711.678081	247622.432619	71.988162	0.007081	0.050619	-0.030838
127M	355696.504483	247481.085093	71.615836	0.006483	0.052093	-0.030164
127R	355742.249769	247699.433582	72.068073	0.007769	0.049582	-0.030927
128A	356648.409291	238949.120544	72.348760	-0.031709	0.072544	-0.001240
128M	356493.815146	239048.181312	72.448036	-0.033854	0.075312	-0.001964
128R	356595.400778	239013.421454	72.678263	-0.032222	0.073454	-0.001737
129A	359967.147498	236529.408675	88.358448	-0.021502	0.017675	0.007448
129M	359886.012186	236541.008034	87.457756	-0.021814	0.019034	0.007756
129R	360010.877124	236522.434810	88.852088	-0.021876	0.016810	0.008088
130A	367055.390300	231316.964359	73.497135	0.037300	-0.062641	0.027135
130M	367022.703962	231339.656580	73.196170	0.036962	-0.062420	0.027170
130R	366999.307927	231246.499771	71.972557	0.038927	-0.062229	0.026557
131A	370743.758424	219904.354782	73.914650	0.095424	-0.012218	0.019650
131M	370727.596728	219819.175402	72.720374	0.095728	-0.011598	0.019374
131R	370716.743942	219723.055634	72.653444	0.094942	-0.011366	0.019444
132A	374398.574579	214616.741749	71.958681	-0.075421	0.008749	-0.027319
132M	374514.442482	214609.515232	72.775805	-0.077518	0.009232	-0.028195
132R	374626.398379	214601.537739	72.561598	-0.079621	0.009739	-0.029402
MOLD	364307.850941	232241.794570	92.400125	0.026941	-0.039430	0.017125
112A	333411.897508	298192.344004	40.510599			
112M	333502.808731	298254.477400	43.895052			
112R	333576.858978	298288.462090	44.025612			
113A	341204.532846	308252.712454	42.100588			
113M	341164.229481	308179.475890	42.294175			
113R	341122.613965	308119.872690	42.130021			
114A	337356.656516	316654.912499	42.298606			
114M	337303.810459	316776.754774	41.989237			
114R	337263.676026	316866.331783	41.700005			
115A	344059.716254	321843.973433	41.274465			

115M	343986.945609	321905.556349	41.791258
115R	344134.507168	321779.031425	40.482175
116A	349317.683722	311806.017175	45.545861
116M	349321.953276	311699.544056	45.415726
116R	349326.120871	311630.175607	45.270803
117A	355051.107082	305462.429150	44.597954
117M	355100.791582	305410.133257	45.011519
117R	355121.702514	305476.323781	44.780018
118A	360691.171619	296264.632650	98.416042
118M	360746.751083	296230.795487	97.449263
118R	360836.188791	296215.496324	95.035963
119A	357030.640619	290290.924432	75.472693
119M	357021.365793	290182.084819	74.497773
119R	357024.485619	290127.355951	74.441155
120A	354067.344207	285920.577840	84.014513
120M	354096.723843	286039.306763	82.068218
120R	354087.232326	285803.220762	79.018738
121A	345274.875605	280241.706798	75.094541
121M	345290.373940	280351.447750	76.319564
121R	345255.986792	280080.111582	76.350685
122A	335352.969682	273763.930381	78.445602
122M	335367.933220	273659.566126	77.936007
122R	335320.150290	273842.226052	78.773915
BAIS	281651.537796	367066.568016	70.190079
DRTS	350251.445326	312436.515827	88.015625
RESI	426167.119394	256908.470998	257.385902
TJIU	395583.672510	364161.969224	229.481049

EXECUTANT,

SC TEHNOGIS GRUP SRL

Persoana juridica autorizata de ANCPI sa executie lucrari de cadastru si geodezie, cartografie
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CLASA I

ALGORITM DE CALCUL
pentru
Determinarea Parametrilor de Transformare din ETRS89 în Stereo70

Ca rezultate ale măsurătorilor, prelucrării şi compensării observaţiilor GPS într-o reţea rezultă:

- coordonate elipsoidale B, L, h compensate – în sistemul ETRS89,
- coordonatele carteziene X, Y, Z compensate – în sistemul ETRS89.

Obiectivul este transformarea acestor coordonate în coordonate planimetrice x, y pe elipsoidul Krassovski în sistemul de proiecţie Stereo 70 şi cota normală H în sistemul de altitudini Marea Neagră 1975

Transformarea între coordonatele elipsoidale şi carteziene oricare ar fi elipsoidul ETRS89 sau Krassovski se face cu formulele 1 şi 2 ţinându-se cont de elementele proprii ale elipsoidului a şi e.

$$X_P = \begin{pmatrix} X_P \\ Y_P \\ Z_P \end{pmatrix} = \begin{pmatrix} (N+h)\cos B \cos L \\ (N+h)\cos B \sin L \\ (N(1-e^2)+h)\sin B \end{pmatrix} \qquad (1)$$

$$\begin{aligned} tan\, B &= \frac{Z}{\sqrt{X^2+Y^2}}\left(1-e^2\frac{N}{N+h}\right)^{-1} \\ tan\, L &= \frac{Y}{X} \\ h &= \frac{\sqrt{X^2+Y^2}}{cos\, B} - N \end{aligned} \qquad (2)$$

unde:

N = a/W şi $W = (1-e^2 \sin^2 B)^{1/2}$

a = semiaxa mare, e = prima excentricitate

Algoritmul de determinare a parametrilor este prezentat succint în fig. 1 şi descris mai jos,în detaliu pe paşi de proceduri:

Pas 1

Se compensează fişierul de măsurători GNSS obţinându-secoordonate B,L,h^E sau X,Y,Z pe elipsoidul ETRS89

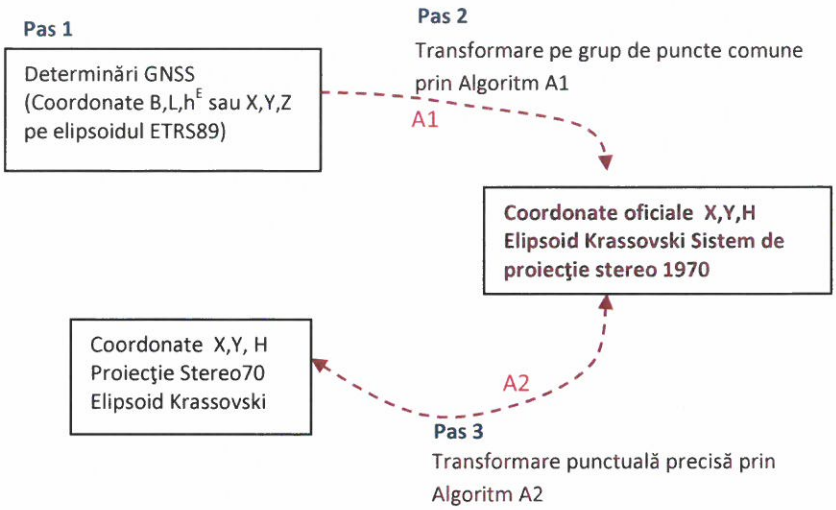

Fig. 1 Schema algoritmului de determinare a parametrilor de transformare din ETRS89 în Stereo 70

Pas2: Se aplică algoritmul A1 pentru determinarea parametrilor de transformare de pe elipsoidul ETRS89 pe elipsoidul Krassovski

Algoritm A1.

Pas 2.1 Se identifică un număr de puncte comune care au coordonate elipsoidale atât pe elipsoidul Krassovski cât şi pe elipsoidul ETRS89.

Pas 2.2 Se reduc toate coordonatele carteziene de pe ambii elipsoizi la centrul de greutate

Pas2. 3 Se construieşte sistemul liniar (3) în care fiecare 3 linii corespunde unui punct comun:

$$\begin{pmatrix} \Delta X_1 \\ \Delta Y_1 \\ \Delta Z_1 \\ . \\ . \\ . \\ \Delta X_m \\ \Delta Y_m \\ \Delta Z_m \end{pmatrix} = \begin{pmatrix} X_1^{KRA} - X_1^{GPS} \\ Y_1^{KRA} - Y_1^{GPS} \\ Z_1^{KRA} - Z_1^{GPS} \\ . \\ . \\ . \\ X_m^{KRA} - X_m^{GPS} \\ Y_m^{KRA} - Y_m^{GPS} \\ Z_m^{KRA} - Z_m^{GPS} \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & X_1 & 0 & -Z_1 & Y_1 \\ 0 & 1 & 0 & Y_1 & Z_1 & 0 & -X_1 \\ 0 & 0 & 1 & Z_1 & -Y_1 & X_1 & 0 \\ & & & \cdots & & & \\ & & & \cdots & & & \\ & & & \cdots & & & \\ 1 & 0 & 0 & X_m & 0 & -Z_m & Y_m \\ 0 & 1 & 0 & Y_m & Z_m & 0 & -X_m \\ 0 & 0 & 1 & Z_m & -Y_m & X_m & 0 \end{pmatrix} \cdot \begin{pmatrix} X_0 \\ Y_0 \\ Z_0 \\ s \\ \varepsilon_X \\ \varepsilon_Y \\ \varepsilon_Z \end{pmatrix} \quad (3)$$

unde:

m este numărul de puncte comune, minim 3.

X_0, Y_0, Z_0sunt cele trei translaţii,

s este factorul de scară

ε_X , ε_Y ,$\varepsilon_Z$sunt unghiurile de rotaţie euleriene în jurul axelor de coordonate (radiani)

Elementele subliniate cu roşu sunt chiar parametrii de transformare de pe ETRS89 pe Krassovski

Pas 2.4 Sistemul 3 se normalizează pe principiul metodei celor mai mici pătrate şi se rezolvă obţinându-se cei 7 parametri X_0, Y_0, Z_0, $s, \varepsilon_X, \varepsilon_Y$, ε_Z. Transformarea coordonatelor punctelor noi determinate numai din măsurători GPS se va realiza pe baza măsurătorilor GPS, cu ajutorul celor şapte parametri introduşi în relaţia (4).

$$X^{KRA} = X_0 + sRX^{GPS} \qquad (4)$$

unde: R este matricea de rotaţie

$$R = \begin{pmatrix} 1 & \varepsilon_Z & -\varepsilon_Y \\ -\varepsilon_Z & 1 & \varepsilon_X \\ \varepsilon_Y & -\varepsilon_X & 1 \end{pmatrix} = I + dR \qquad (5)$$

Algoritm A2.

Pas 3.1 Transformarea coordonatelor carteziene de pe elipsoidul Krassovski în coordonate plane x, y în proiecţia stereo 70 utilizând formule punctuale din cartografia matematică conform procedurii de mai jos scrisă în limbaj C++. (Formula de transformare cu coeficienţi constanţi)

```
POINTF *GeoSt70(double B, double L){
  double x1,y1,x2,y2,x3,y3,x4,y4,x5,y5,x6,y6,y7;
  double b=0,l=0;
  POINTF *p;
  p=new POINTF;
  x1=(B-1.656E+5)/10000; y1=(L-9E+4)/10000;
  x2=x1*x1; x3=x2*x1;x4=x3*x1;x5=x4*x1; x6=x5*x1;
  y2=y1*y1; y3=y2*y1;y4=y3*y1;y5=y4*y1; y6=y5*y1; y7=y1*y6;
   b=(double)(308758.958015*x1+75.360894*x2+60.216061*x3-1.4958E-2*x4);
   l=(double)((215179.420915-10767.838255*x1-128.6601083*x2-2.1068528*x3-
                                                    5.00304E-2*x4)*y1);
   b+=((3752.145711-99.92809*x1-6.6745224*x2-6.83783E-2*x3-2.60497E-3*x4-
                                                    7.25E-6*x5)*y2);
   b+=(1.40972E-2*x5+1.18E-6*x6);
   b+=((0.3359277-6.43402E-2*x1+3.826E-4*x2+7.35E-5*x3)*y4);
   b-=((6.4963e-5+5.157E-6*x1)*y6);
   l+=(double)((-23.2138674-1.9280783*x1+0.1359301*x2+3.1009E-3*x3+1.009E-
                                                    4*x4)*y3);
   l-=(double)((5.104E-4*x5+3.23E-5*x6)*y1);
   l+=(double)((-8.96796E-3-5.5949E-4*x1+3.568E-5*x2)*y5);
   l-=(5.118E-7*y7);
   b=b*0.99975+5E+5;
   l=l*0.99975+5E+5;
  p->X=l; p->Y=b;
  return p;
}
```

În pointerul p se obţin coordonatele stereo 70 X şi Y.

Pas 3.2 Transformarea cotei elipsoidale în cotă normală sistem de altitudini Marea Neagră 1975

Pentru determinarea cotelor se determină pentru toate punctele comune ondulaţia n prin relaţia

$$n = h - H \tag{6}$$

unde:

h este cota elipsoidală,
H este cota normală

Pe baza acestor puncte care au coordonate calculate stereo 70 x, y se scriu relaţiile 7

$$\begin{aligned} n(x,y) = {} & (p_1 + p_2 x + p_3 y) + \\ & (p_4 x^2 + p_5 xy + p_6 y^2) + \\ & (p_7 x^3 + p_8 x^2 y + p_9 x y^2 + p_{10} y^3) \end{aligned} \tag{7}$$

unde n(x,y) este ondulaţia cvasigeoidului în punctul de coordonate x,y coordonate în proiecţia stereografică 1970 iar $p_1 - p_{10}$ sunt parametrii de transformare pentru cotă care în funcţie de numărul de puncte comune disponibile se pot alege doar 3 parametri (minim 3 puncte comune), 6 parametri (minim 6 puncte comune) sau 10 parametri (minim 10 puncte comune).

Pentru fiecare punct comun se scrie o astfel de relaţie obţinând un sistem de ecuaţii care se rezolvă prin normalizare dacă numărul de puncte comune este mai mare decât numărul de parametri aleşi.

Prin rezolvarea sistemului se obţin parametrii de transformare pentru cotă.

Atât algoritmul A1 cât şi algoritmul A2 sunt implementaţi în programul GPSTools.

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CLASA I