



Status of EVRS2007

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Status of EVRS2007

Outline:

- **Contents of the UELN data base**
- **Datum of EVRS2007**
- **Outlook**

Developement of UELN

after handing over of UELN-95/98 solution

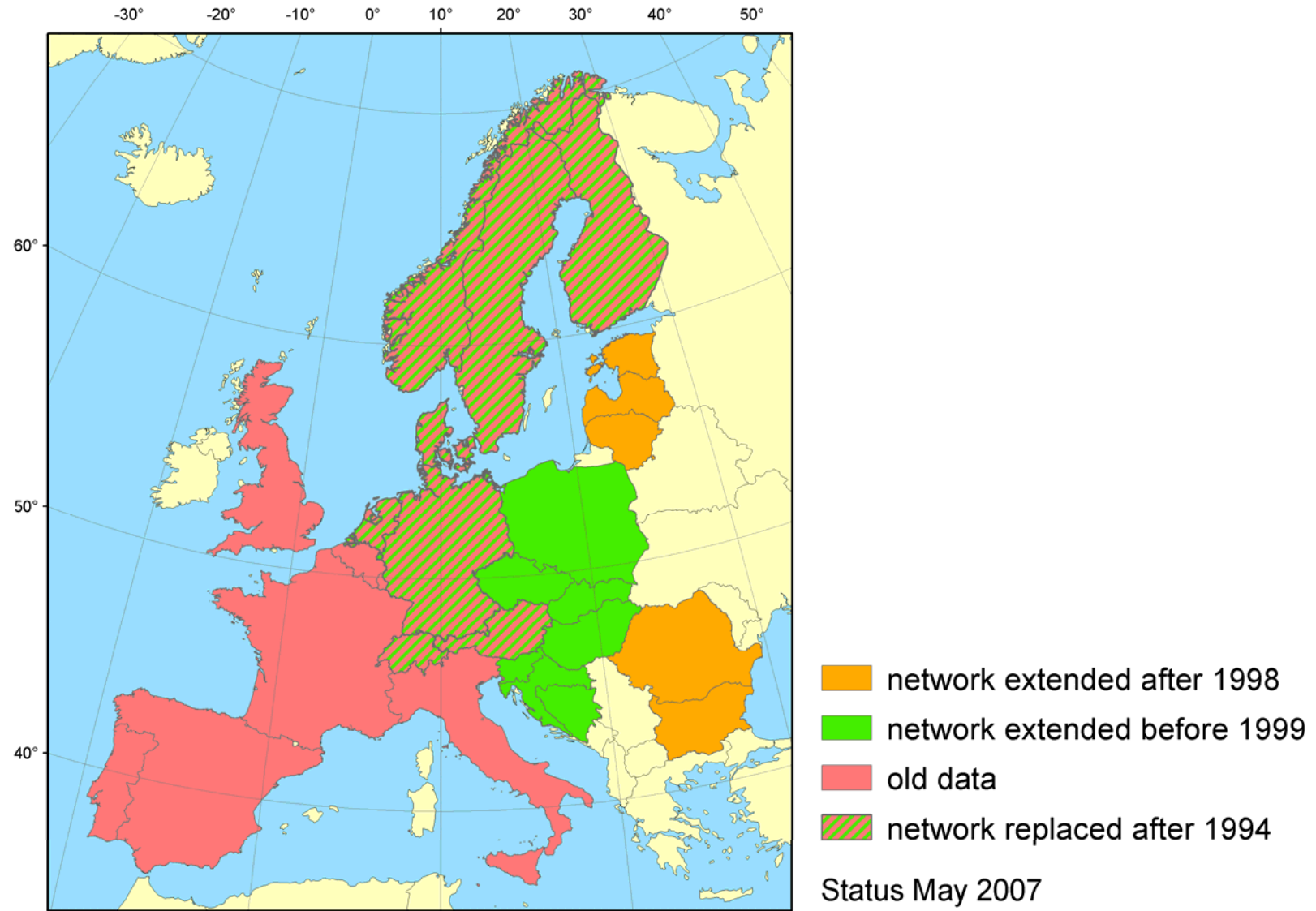
Extension of the network to Eastern Europe by integration of the levelling networks of:

- **1999**
 - Estonia
 - Latvia
- **2000**
 - Romania
- **2001**
 - Lithuania
- **2003**
 - Bulgaria

Replacement of old data by topical complete national first order levelling networks of:

- **2002**
 - Switzerland
- **2005**
 - the Netherlands
 - Finland
 - Norway
 - Sweden

Development of UELN



New data since 2006

- **Last year several countries announced data:**
 - Poland (expected for the next weeks)
 - France
 - Portugal
 - Lithuania (expected for July 2007)
- **New data actually handed over by Slovakia**
 - epoch of the measurements 1997-2002
 - 170 nodal points
 - 183 measurements
 - analysis not completed yet
- **agreement on the potential difference between France and Great Britain through the tunnel announced**
- **Spain announced data for 2008 (at the earleast)**



Future Datum of EVRS (1)

- **EVRS2000 datum defined by zero level of NAP**
- **realized by 1 point in the Netherlands**

EVRS2007:

- **realizing of the datum by various points distributed over Europe**
- **keeping the level of EVRS2000 by useful distribution of datum points**
- **fitting the heights to the EVRS2000 solution by introducing the results of UELN 95/98 of the datum points in the free adjustment**
- **monitoring of the future time evolution of EVRS by observation of time series of selected ECGN stations**

Future Datum of EVRS (2)

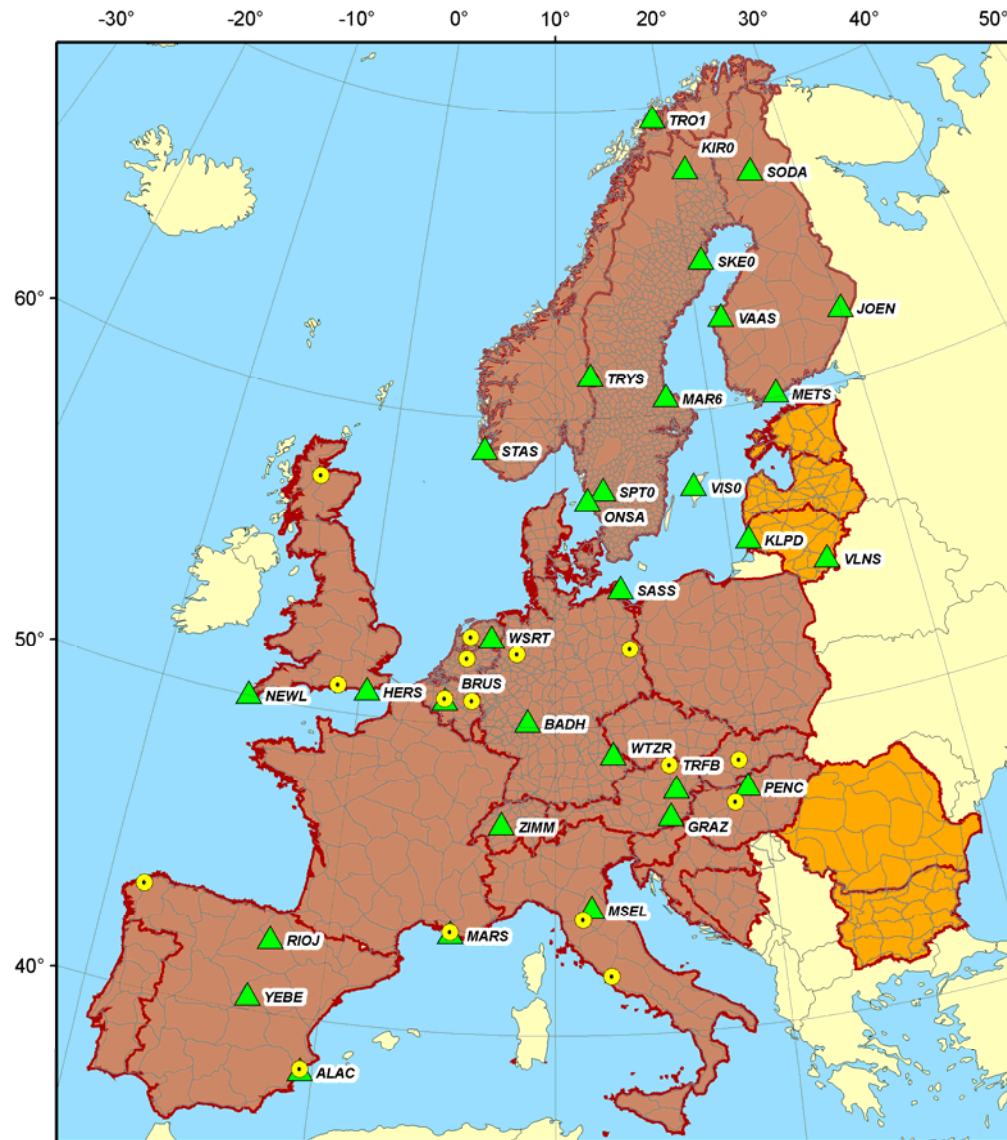
Circular letter to all participating countries in December 2006 requesting to propose:

- **UELN nodal points which were already part of the UELN 95/98 solution for using them as datum points in the next adjustment**
 - stable marked
 - no significant movements
- **ECGN stations**
 - permanent GPS observations
 - periodic absolute gravity measurements
 - periodic precise levelling connections to UELN

Responses to the circular letter

country	answer	proposed datum point	proposed ECGN station
A	x	AT01(connected to 102105)	GRAZ, TRFB
B	x	200038	BRUS
CH	x	not expedient	ZIMM
D	x	401110, 401668	SASS, WTZR, BADH
DK			
E	x	600157, 600224	ALAC, YEBE, RIOJ, (Santiago)
F	x	700359	MARS
I	x	800432, 800441	MSEL
NL	x	913000,913011,913018	WSRT
PT			
H	x	1103000	PENC
CZ			
GB	x	1300364, 1300383	NEWL, HERS
NO	x	not expedient	STAS, TRO1, Trysil
SE	x	not expedient	SPT0, KIR0, MAR6, ONSA, SKE0, VIS0
FIN	x	not expedient	METS, JOEN, SODA, VAAS
PL	x		
SLO			
SK	x	EH-V	
HR	x		
LV	x	not applicable	
EST		not applicable	
RO	x	not applicable	
LIT	x	not applicable	VLNS, Klaipeda
BG	x	not applicable	Plana

Proposed datum points and ECGN stations



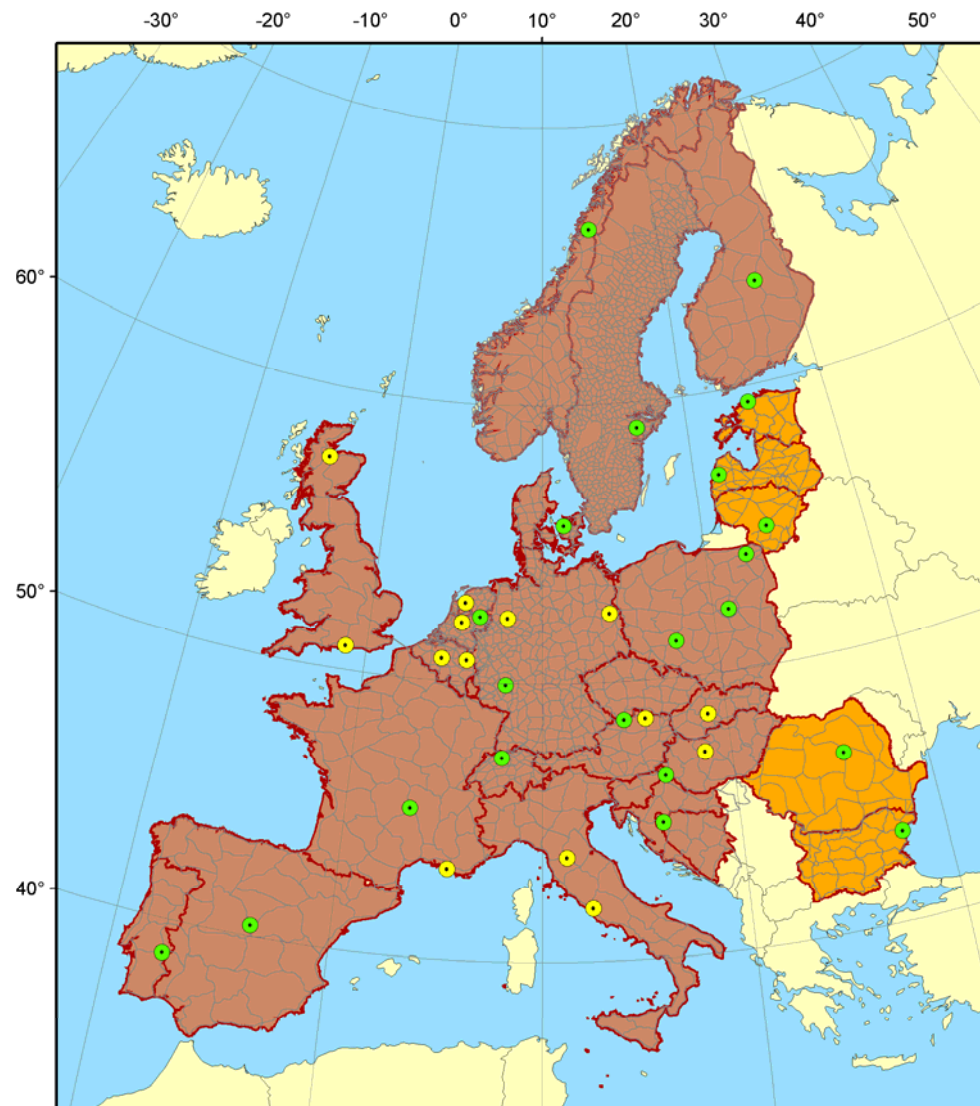
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- proposed datum points
- ▲ proposed ECGN stations

Adjustments with different sets of proposed datum points

- one datum point in NL
- another datum point in NL
 - different results depending on chose of the datum point
- 9 datum points (AT, BE,2 DE, FR, HU, 3 NL)
 - one proposed point in NL differs considereably
- 8 datum points (AT, BE,2 DE, FR, HU, 2 NL)
- 13 datum points
(AT, BE,2 DE, FR, HU, 2 NL + 2 It, 2 GB)
 - Great Britain is only connected by one uncertain height difference
 - variations are to be expected after including of measured height difference through the tunnel
- 11 datum points (AT, BE,2 DE, FR, HU, 2 NL + 2 It)

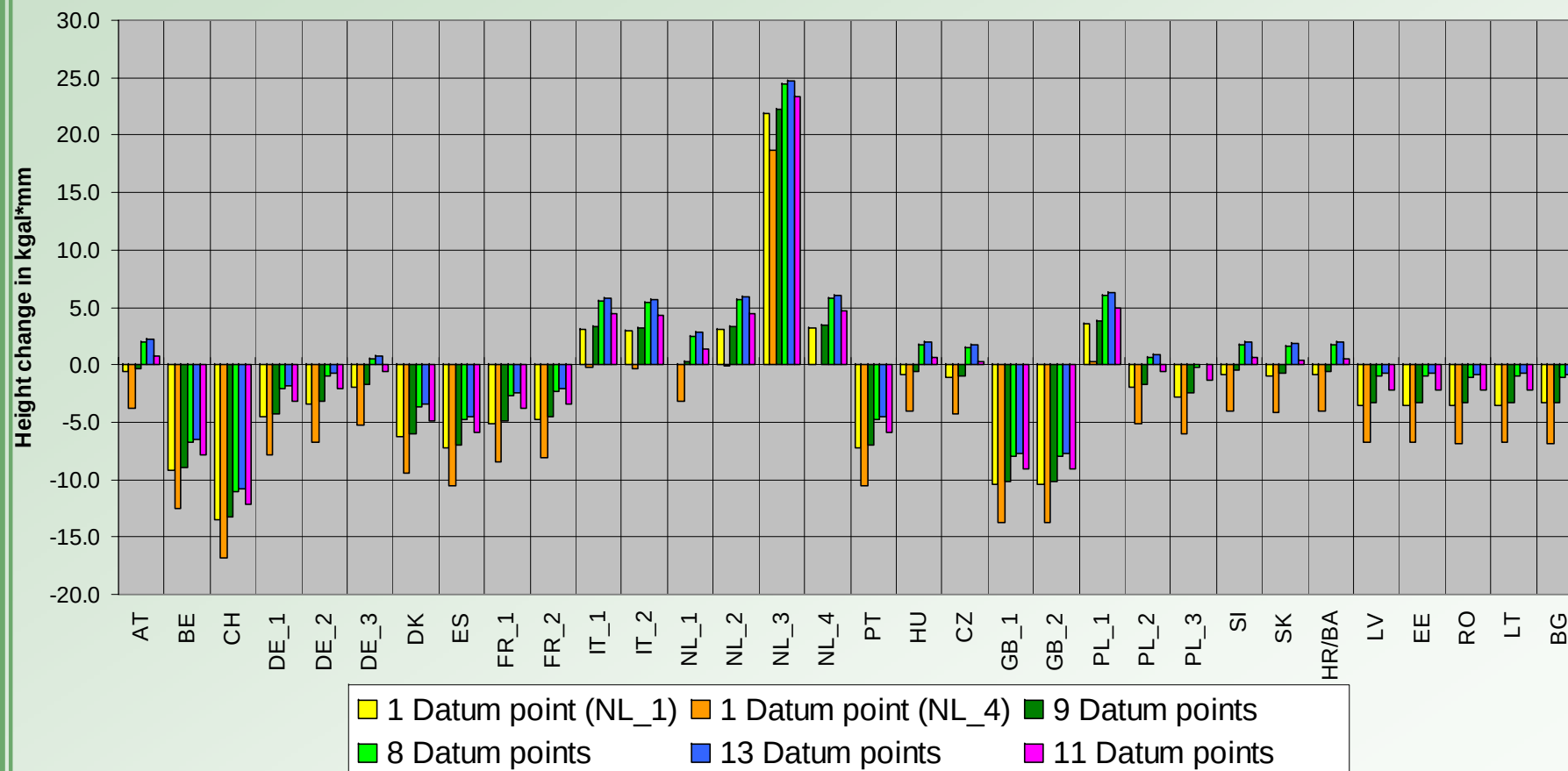
Distribution of the used datum points and sample points



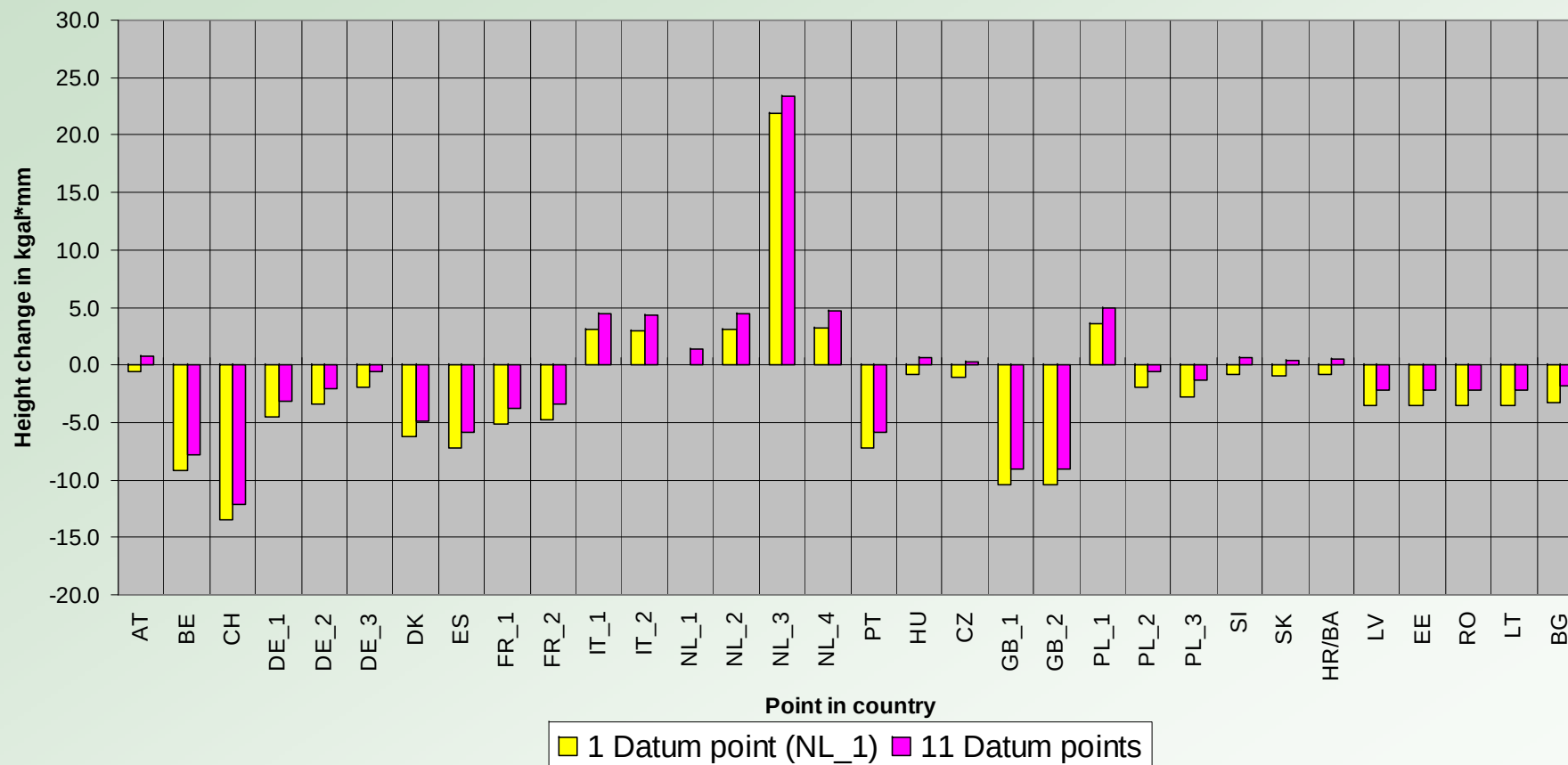
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- proposed datum points
- sample points

Height changes to UELN-95/98 depending on datum realization



Height changes to UELN-95/98 depending on datum realization



Height variations in the countries

	mean difference to UELN-95/98	mean difference to adjustment 2003
	[kgal·mm]	[kgal·mm]
Austria	0.6	-2.2
Belgium	-7.5	-7.3
Switzerland	-29.7	-2.8
Germany	-1.8	-2.1
Denmark	-4.8	0.4
Spain	-5.8	-4.2
France	-6.3	-4.7
Italy	3.6	-2.4
Netherlands	-0.7	-0.6
Portugal	-5.8	-4.2
Hungary	0.5	-1.4
Czech Republik	0.3	-2.2
Great Britain	-9.0	-8.6
Norway	78.1	84.6
Sweden	178.5	184.9
Finland	83.9	67.0
Poland	-1.2	-2.1
Slovenia	0.5	-5.1
Slovakia	0.3	-2.2
Croatia	0.6	-2.2
Latvia		-2.1
Estonia		-2.2
Romania		-2.1
Lithuania		-2.1
Bulgaria		-2.1

Conclusions and Outlook

- **New adjustment is planned for 2007**
- **The level of the new EVRS datum will be defined by the geopotential values of the UELN-95/98 solution of several points in Europe.**
- **Height differences will be in the most cases less than 10 mm excepted Scandinavia**
- **Variations are to be expected after including of new data**
- **Any new data should be handed over as soon as possible to the UELN data base**
- **What should be handed over ?**
- **What about tidal correction ?**
- **Decision about data policy necessary**