

Status of EVRS2007

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Status of EVRS2007

Outline:

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

Development of UELN

after handing over of UELN-95/98 solution

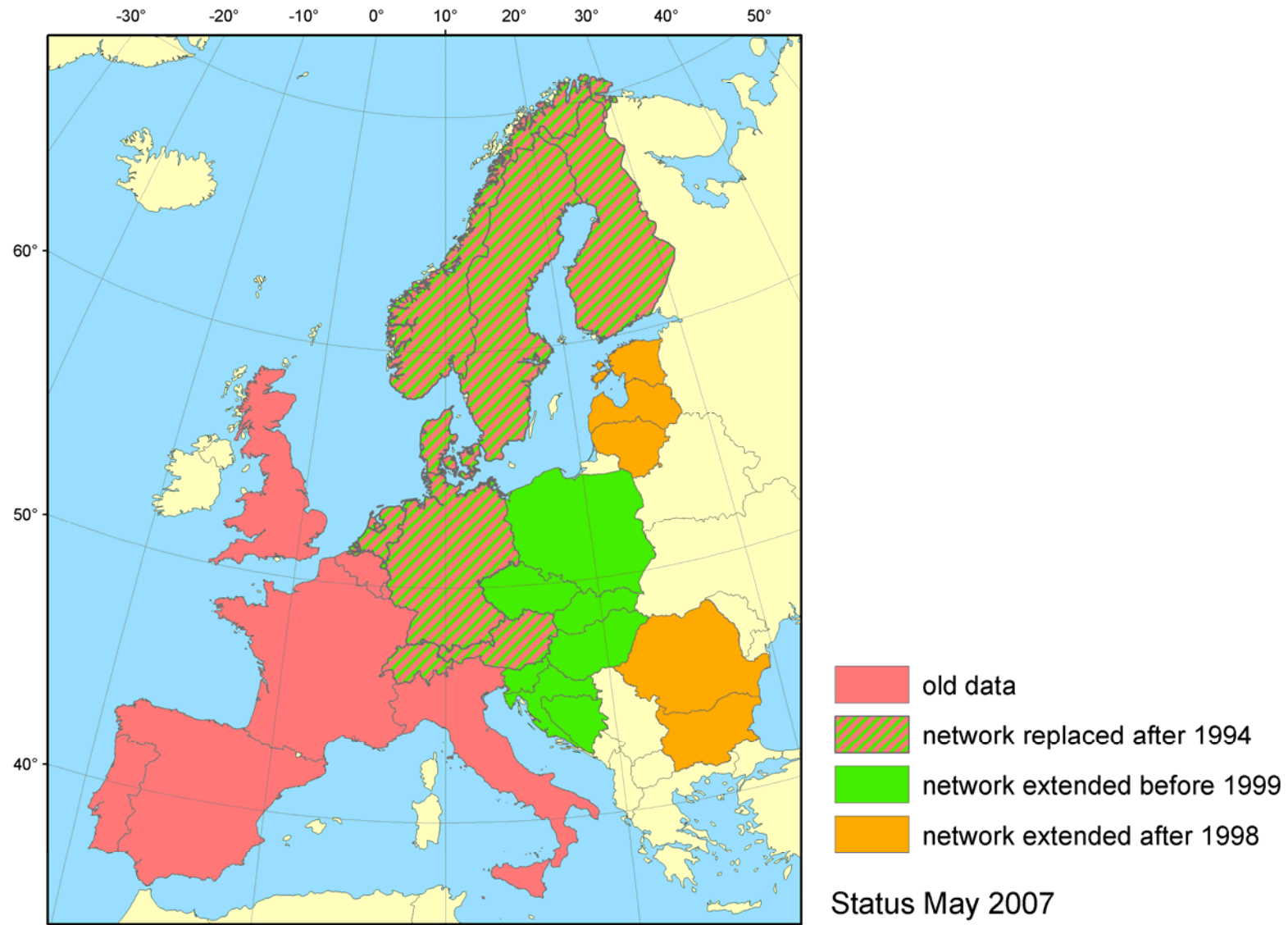
Extension of the network to Eastern Europe by integration of the levelling networks of:

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

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

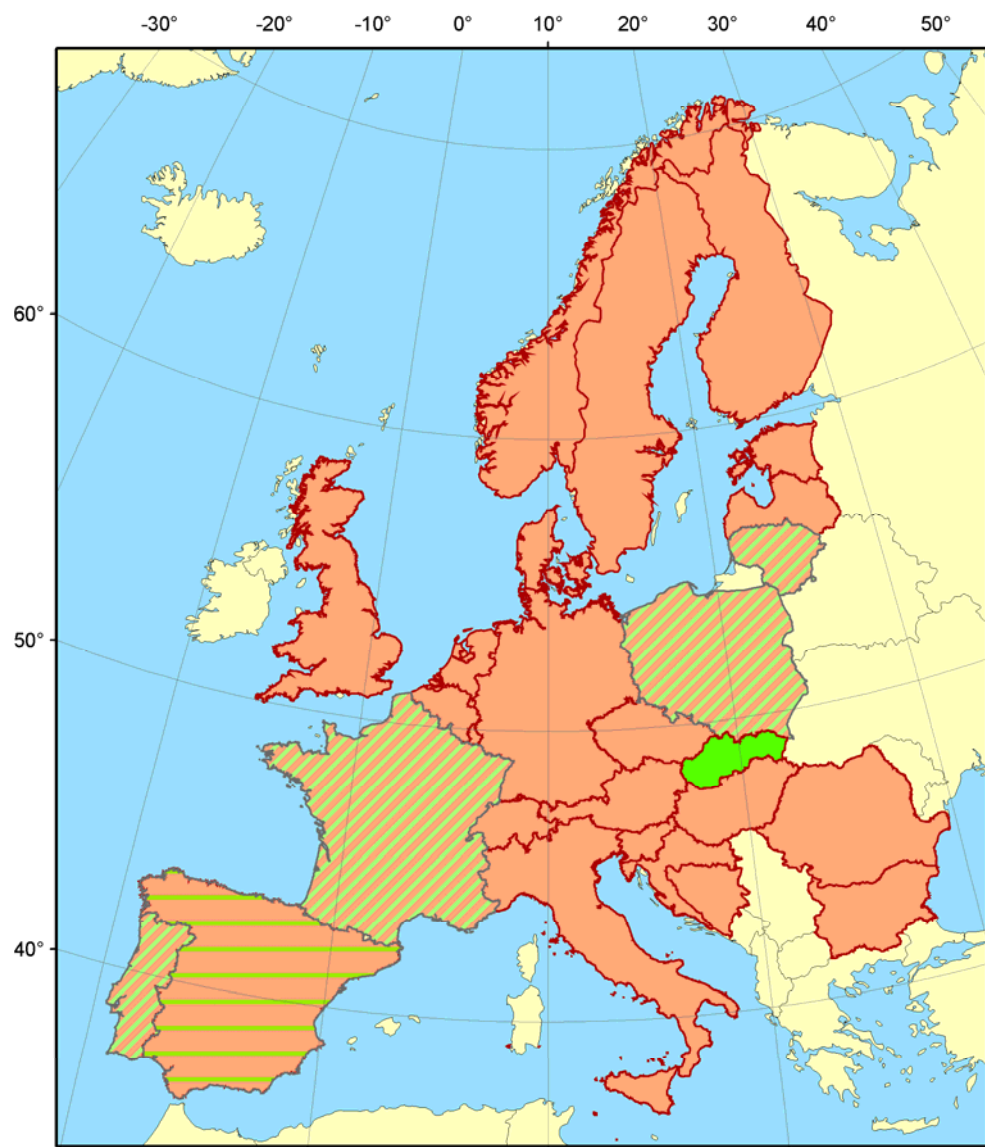
- **2002**
 - Switzerland
- **2005**
 - the Netherlands
 - Finland
 - Norway
 - Sweden

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 earliest)**



New data since 2006

- no
- announced for 2007
- delivered
- announced for 2008

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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)

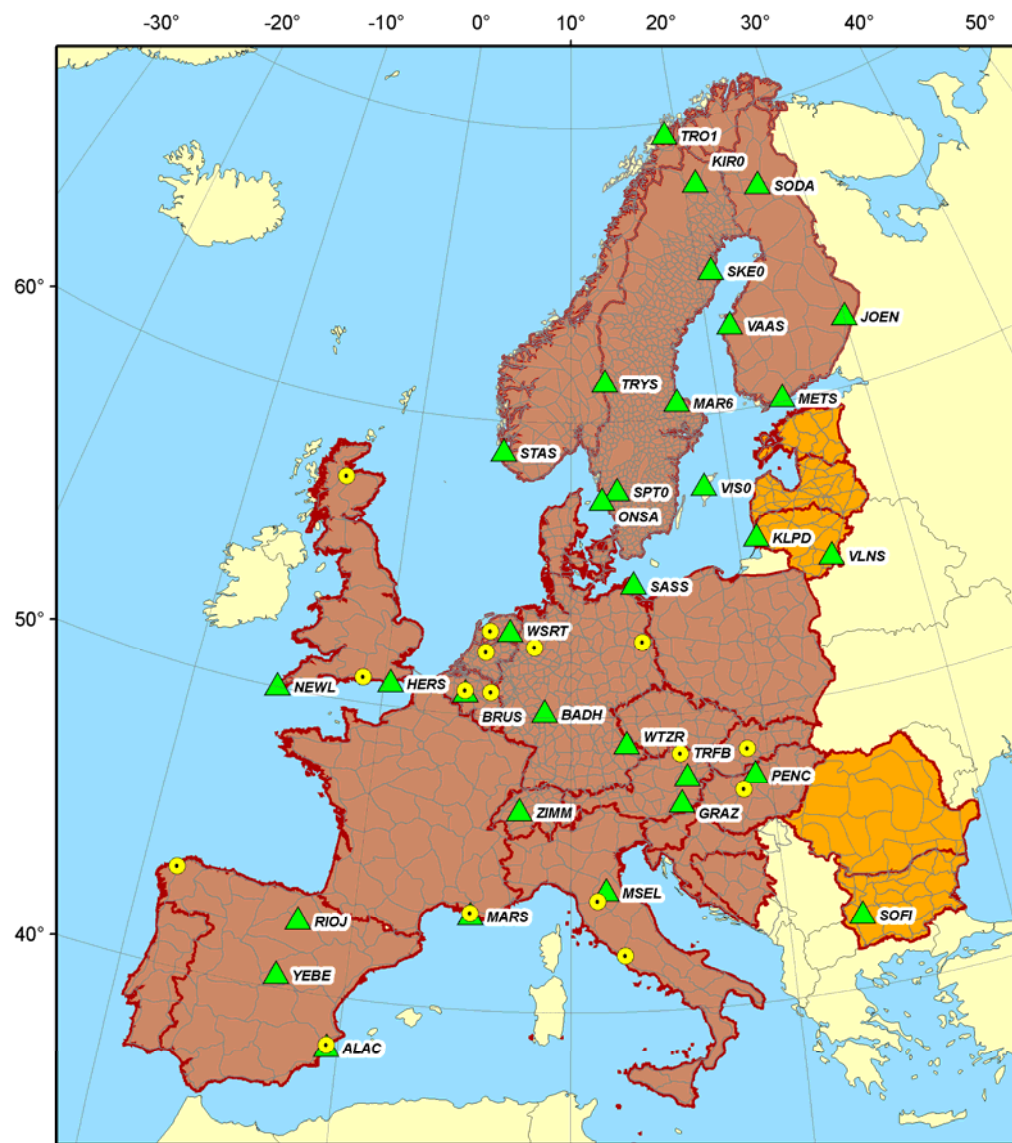
Circular letter to all participating countries in December 2006 requesting to propose:

- **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	SOFI

Proposed datum points and ECGN stations



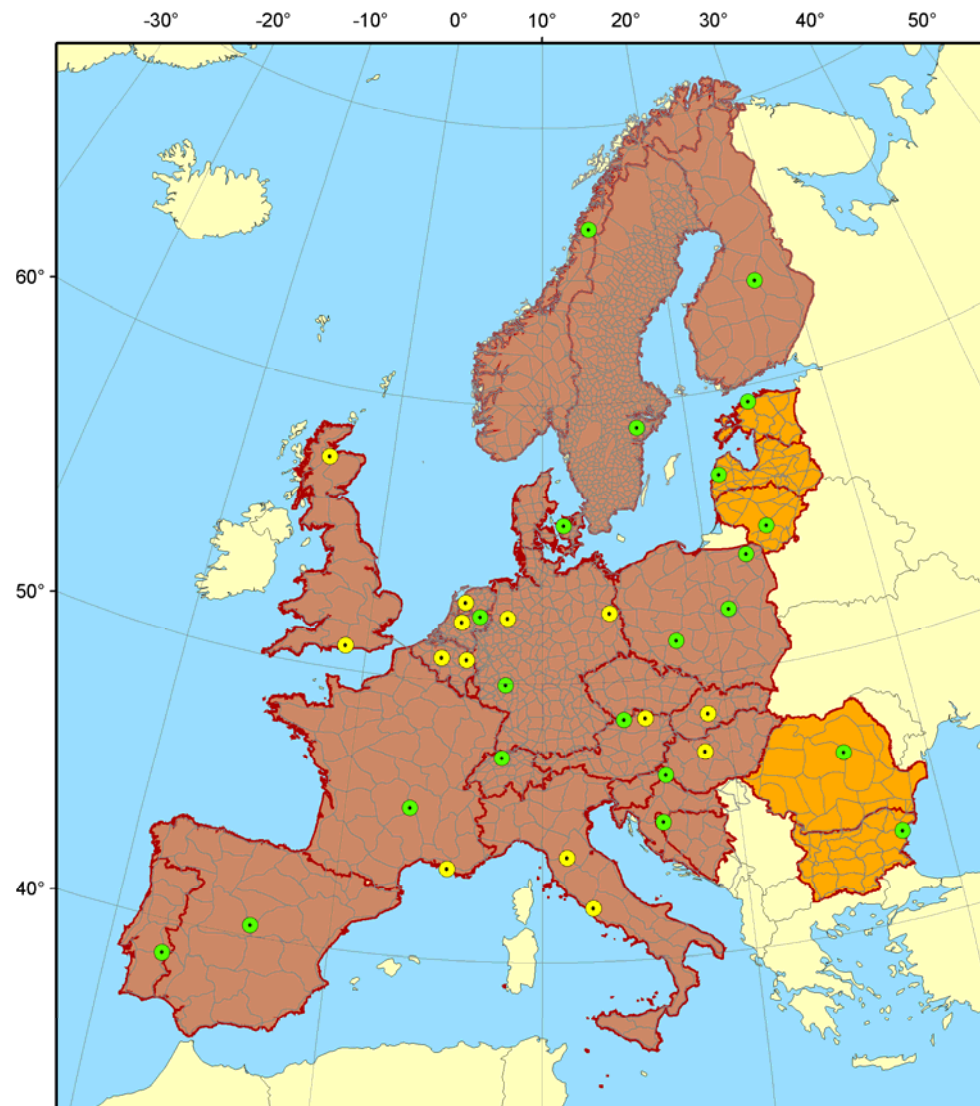
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- proposed datum points
- ▲ proposed ECGN stations

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 considerably
- 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)

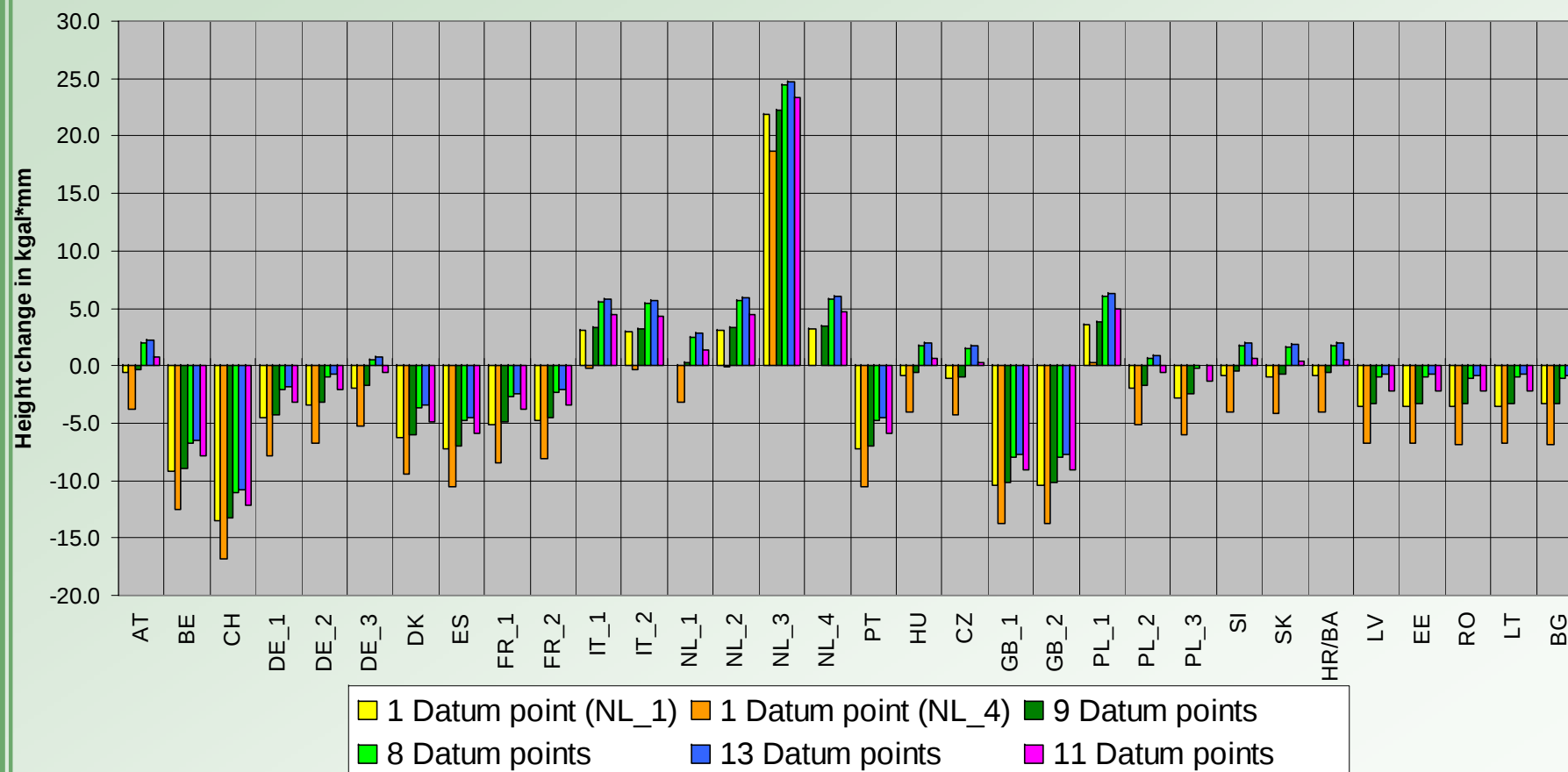
Distribution of the used datum points and sample points



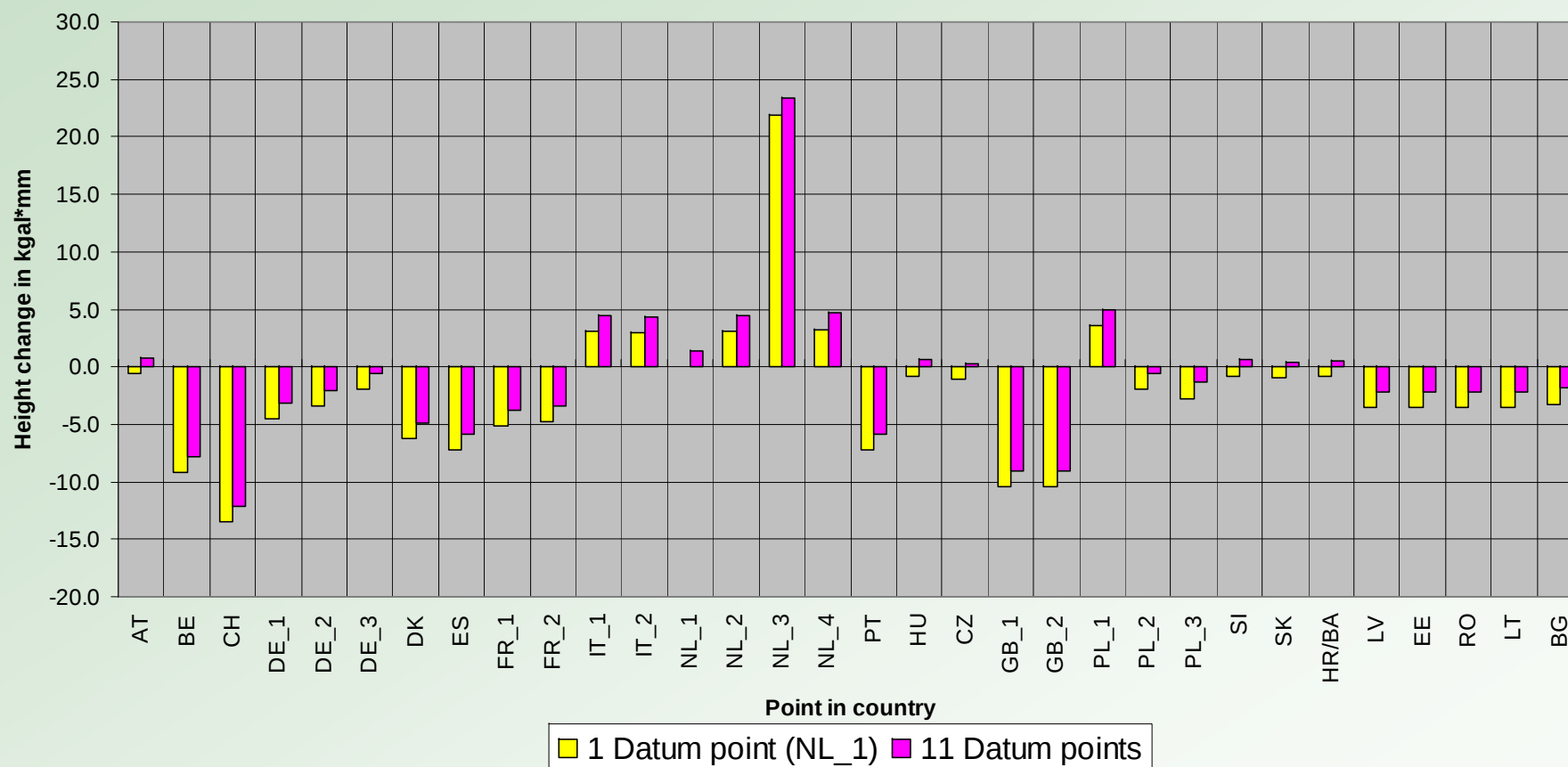
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- proposed datum points
- sample points

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**