



GOING-ON DEVELOPMENTS OF THE LITHUANIAN NATIONAL GEODETIC CONTROL

National report of LITHUANIA

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EUREF Symposium, Vienna, June 1-4, 2005

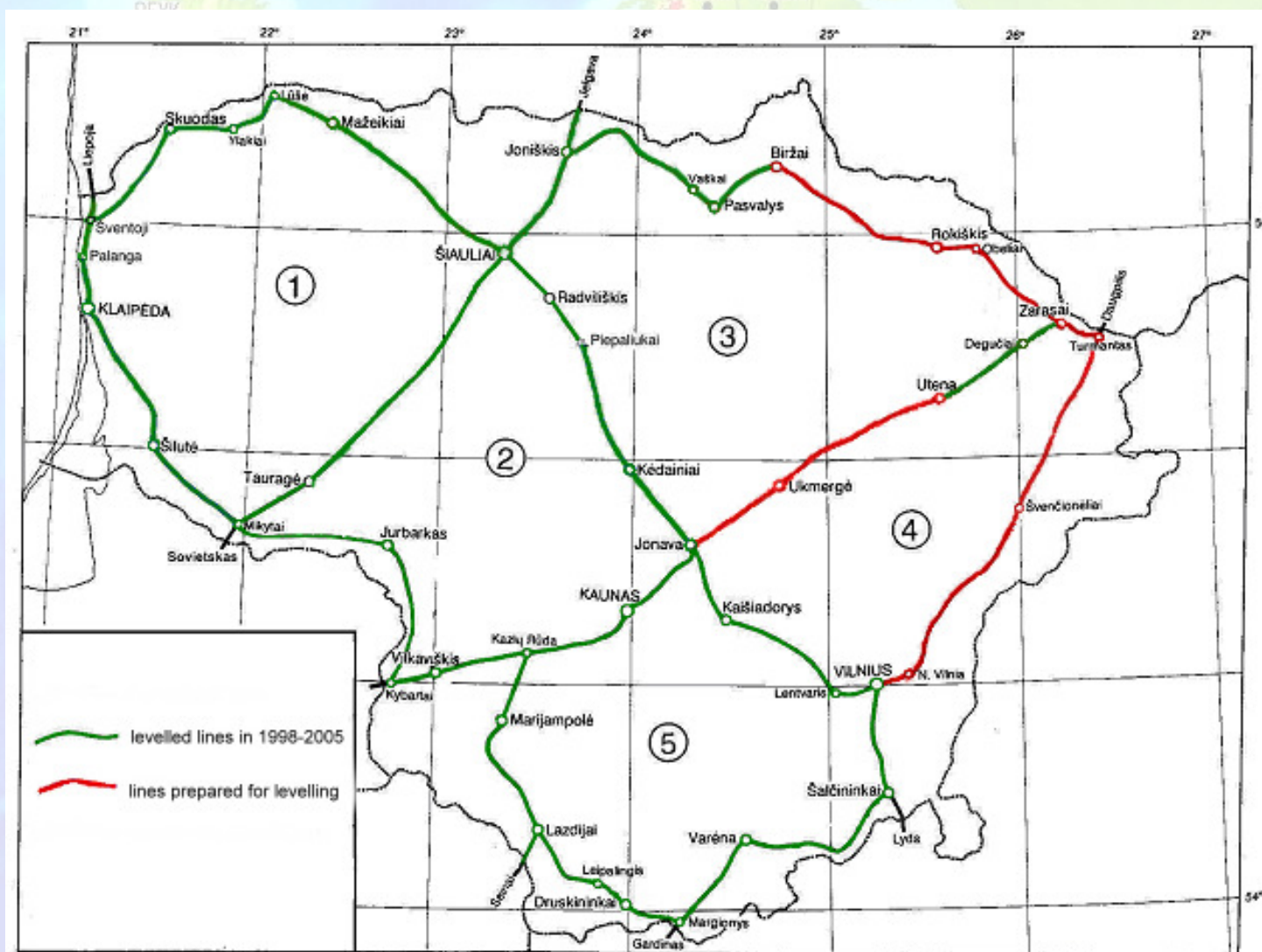


OUTLINE

- Current status of the National Geodetic Vertical Network
- Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA
- Investigations of the geomagnetic field
- Geodetic stations - candidates to ECGN
- Nordic-Baltic GPS campaign
- Design of the permanent GPS stations network



Current status of the National Geodetic Vertical Network (1)



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Current status of the National Geodetic Vertical Network (2)

Levelling accuracy characteristics

Year of levelling	m_{km} , mm
1998	0,48
1999	0,42
2001	0,39
2002	0,41
2003	0,43
2004	0,47

Misclosures of vertical network polygons

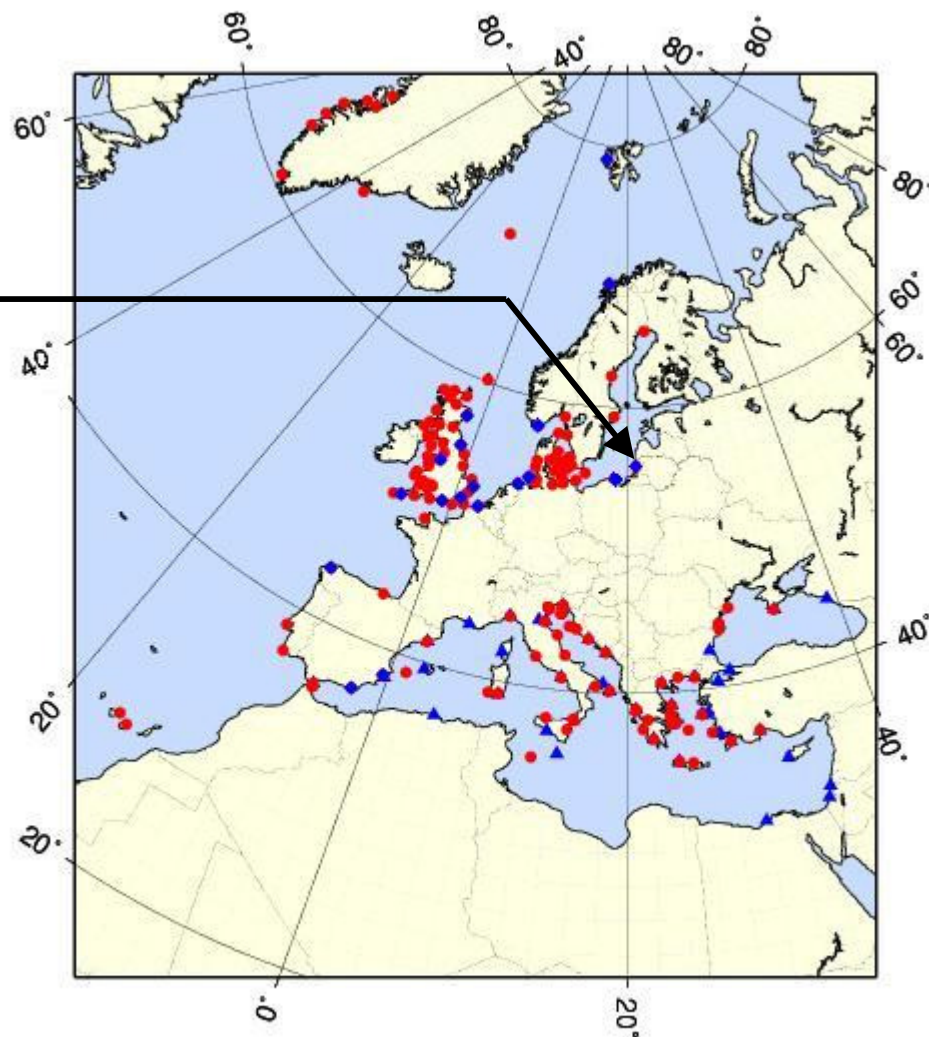
Polygon No	Polygon perimeter km	Actual misclosure mm	Allowable misclosure mm
1	491,1	+4,67	22,16
2	517,8	+14,41	22,76
5	499,9	-10,73	22,36



Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (1)

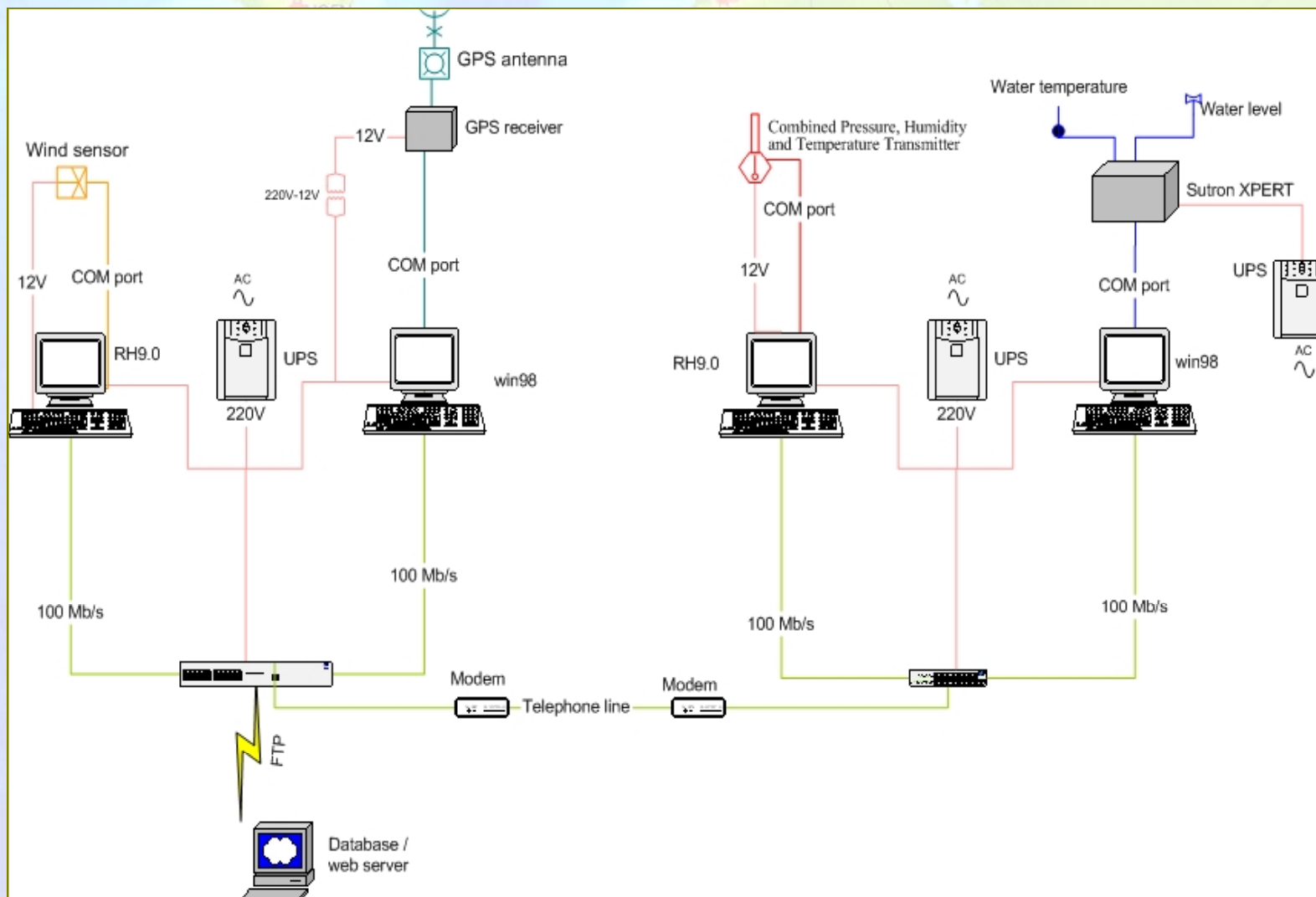
$54^{\circ} 42' 55''$

$21^{\circ} 07' 08''$





Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (2)



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Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (3)



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Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (4)



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Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (5)

OBSERVABLES:

Water:

Level
Temperature

Air:

Temperature
Pressure
Humidity

Wind:

Direction
Speed

Earth crust deformations:

Horizontal
Vertical

Absolute Gravity:

Acceleration
Ground water level

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Technical equipment and data flows of the CGPS station and tide gauge KLAIPEDA (6)



Objective:

Near Real Time (NRT) 24/7/365 service

Registration:

Water level, temperature

Sampling interval - 10 s

Recording (averaging) interval - 60 s

Air temperature, pressure, humidity

Sampling interval - 5 s

Recording (averaging) interval - 60 s

Wind speed, direction

Sampling interval - 5 s

Recording (averaging) interval - 60 s

CGPS observations

Recording interval - 30 s

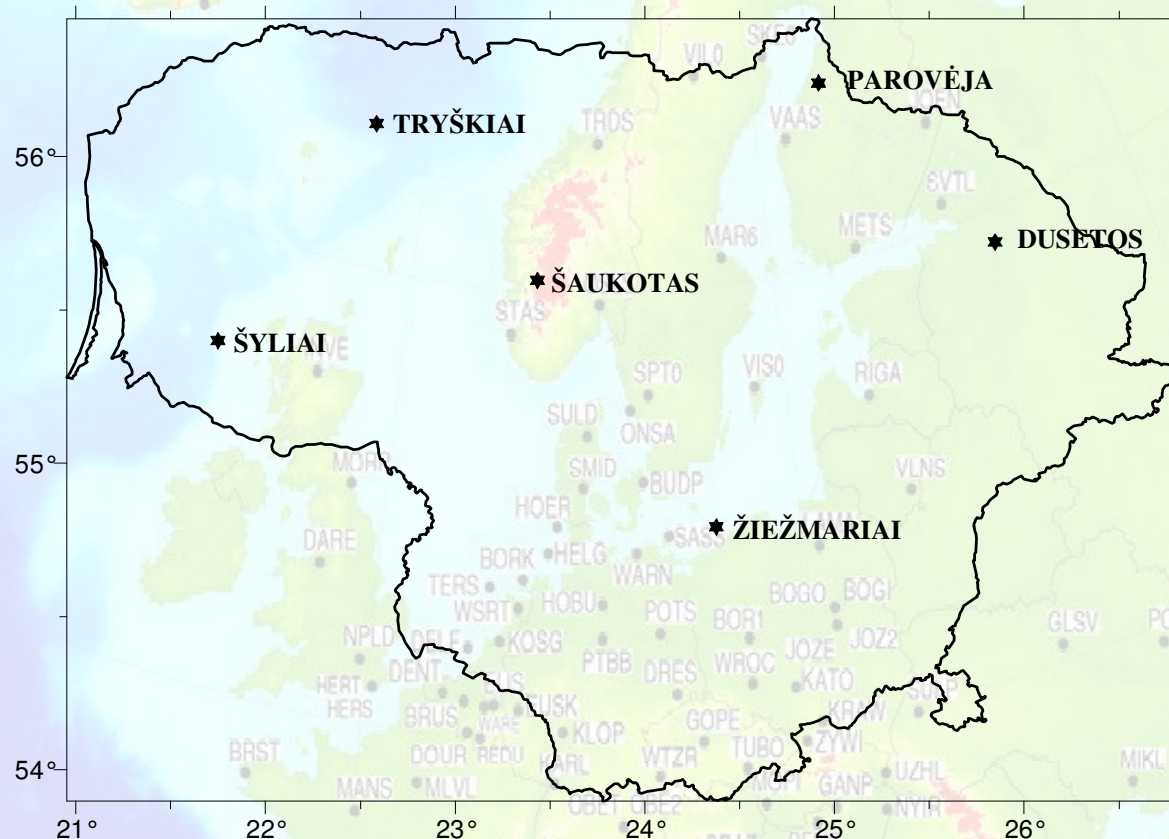
Presentation:

Hourly files: records with 1 minute intervals
Maximum 65 minutes delay

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Investigations of the geomagnetic field (1)



Location of secular variation stations in Lithuania

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Investigations of the geomagnetic field (2)

Table 4.2. Changes of geomagnetic field parameters

STATIONS	Changes of geomagnetic parameters for the period 1999,5 – 2001,5			Changes of geomagnetic parameters for the period 2001,5 – 2004,5			Changes of geomagnetic parameters for the period 1999,5 – 2004,5		
	ΔD '	ΔI '	ΔF nT	ΔD '	ΔI '	ΔF nT	ΔD '	ΔI '	ΔF nT
ŽIEŽMARIAI	11,6	1,5	71,8	16,5	2,1	120,1	28,1	3,6	191,9
DUSETOS	10,9	1,1	78,1	16,6	2,1	121,5	27,5	3,3	199,6
PAROVĖJA	11,3	2,0	75,0	18,3	2,0	122,1	29,5	4,0	197,1
ŠAUKOTAS	11,2	1,6	74,5	18,9	2,4	113,8	30,2	4,0	188,3
TRYŠKIAI	11,4	2,1	71,4	19,9	1,7	118,7	31,2	3,8	190,1
ŠYLIAI	12,0	1,8	75,3	18,7	1,7	119,7	30,7	3,4	195,0

Table 4.3. Annual geomagnetic field parameters changes

STATIONS	Annual changes for the period 1999,5 – 2001,5			Annual changes for the period 2001,5 – 2004,5			Annual changes for the period 1999,5 – 2004,5		
	ΔD '	ΔI '	ΔF nT	ΔD '	ΔI '	ΔF nT	ΔD '	ΔI '	ΔF nT
ŽIEŽMARIAI	5,8	0,8	35,9	5,5	0,7	40,0	5,6	0,7	38,4
DUSETOS	5,5	0,6	39,1	5,5	0,7	40,5	5,5	0,7	39,9
PAROVĖJA	5,7	1,0	37,5	6,1	0,7	40,7	5,9	0,8	39,4
ŠAUKOTAS	5,6	0,8	37,3	6,3	0,8	37,9	6,0	0,8	37,7
TRYŠKIAI	5,7	1,1	35,7	6,6	0,6	39,6	6,2	0,8	38,0
ŠYLIAI	6,0	0,9	37,7	6,2	0,6	39,9	6,1	0,7	39,0



Geodetic stations - candidates to ECGN (1)

Table 5.1. General information on geodetic stations - ECGN candidates

Parameter	Site VILNIUS	Site KLAIPEDA
EPN/IGS code	VLNS	KLPD
IERS DOMES #:	10801M001	10802M001
Latitude	54.653	55.7165
Longitude	25.299	21.1183
Ellipsoidal height	240.821	42.78
Position	2	2
Tide gauge PMSL code	-	080161
Tide gauge ESEAS code		KLPD
EUVN-No	LT02	-
UELN ID	12002	To be included
Normal height (NAP)	215.660	18.046
Absolute gravity measurement	1994, 2002	1994, 2002



Geodetic stations - candidates to ECGN (2)

VILNIUS (VLNS)



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Geodetic stations - candidates to ECGN (3)

KLAIPEDA (KLPD)

CGPS antenna

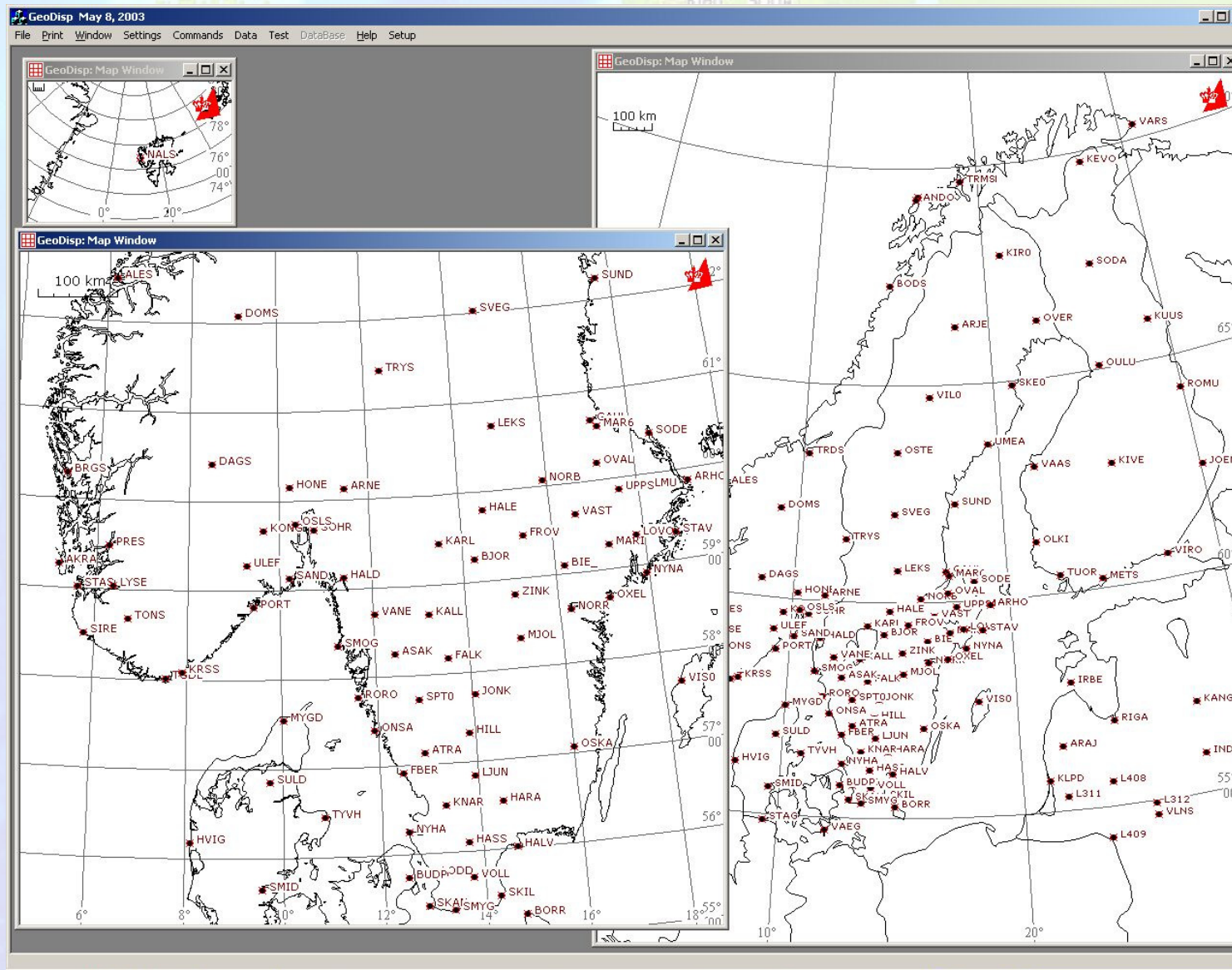


CGPSBM

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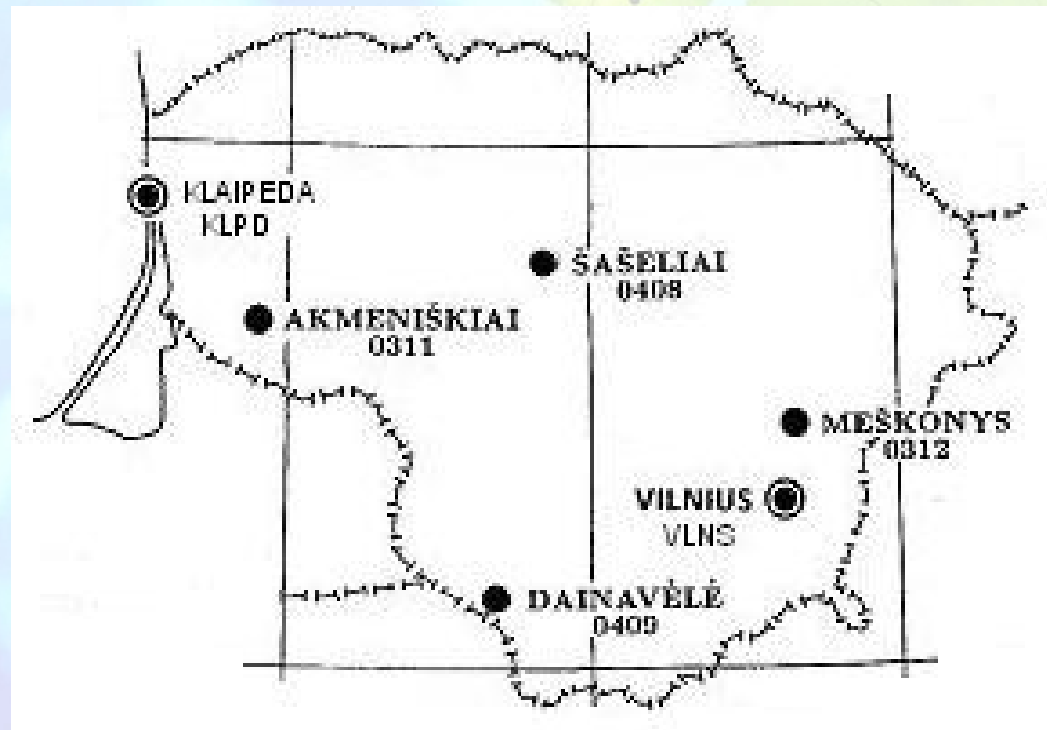
Nordic-Baltic GPS campaign (1)



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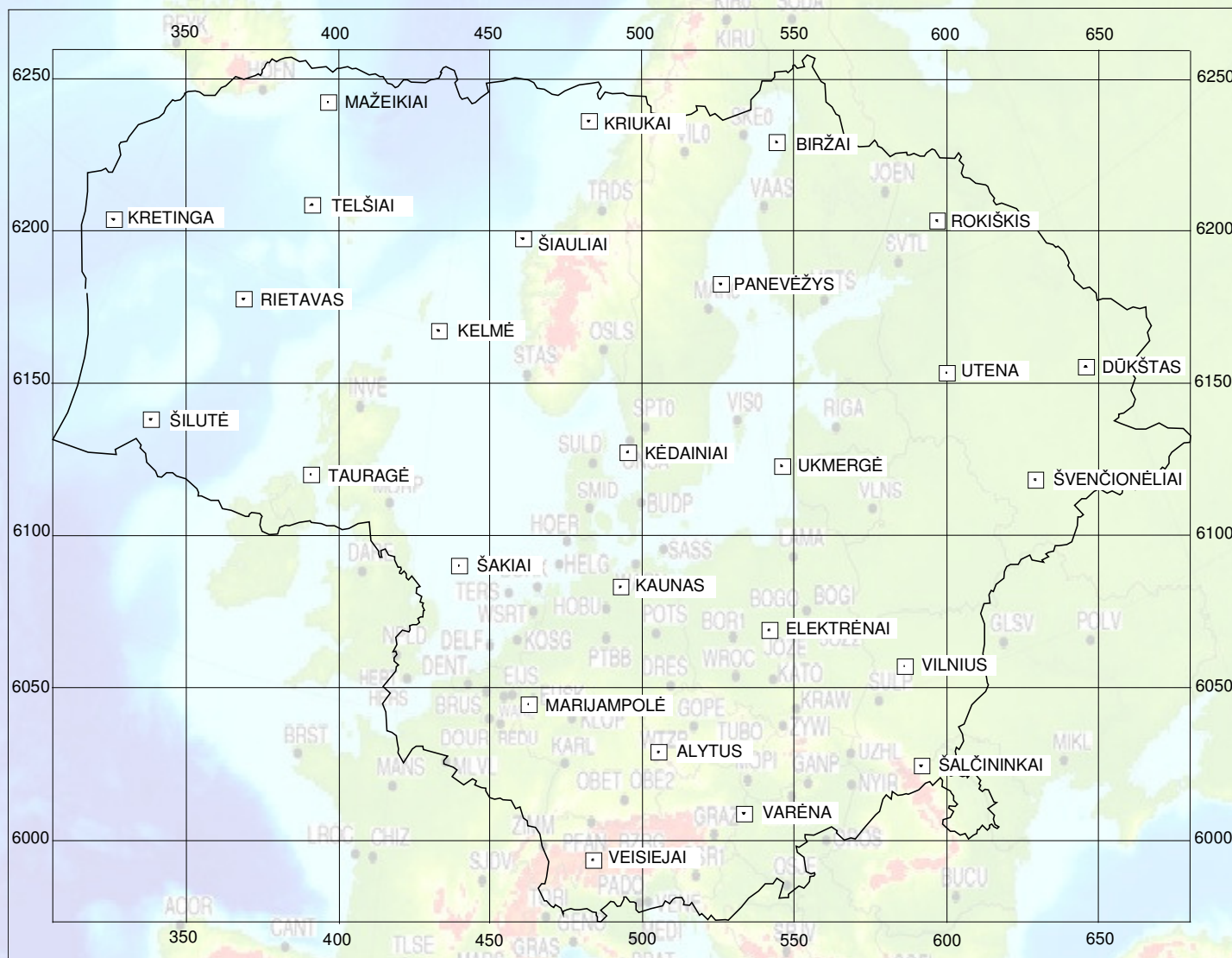
Nordic-Baltic GPS campaign (2)



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Design of the permanent GPS stations network (1)



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THANKS FOR YOUR ATTENTION !

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