National report of LITHUANIA

Status of the geodetic control of Lithuania and further movements

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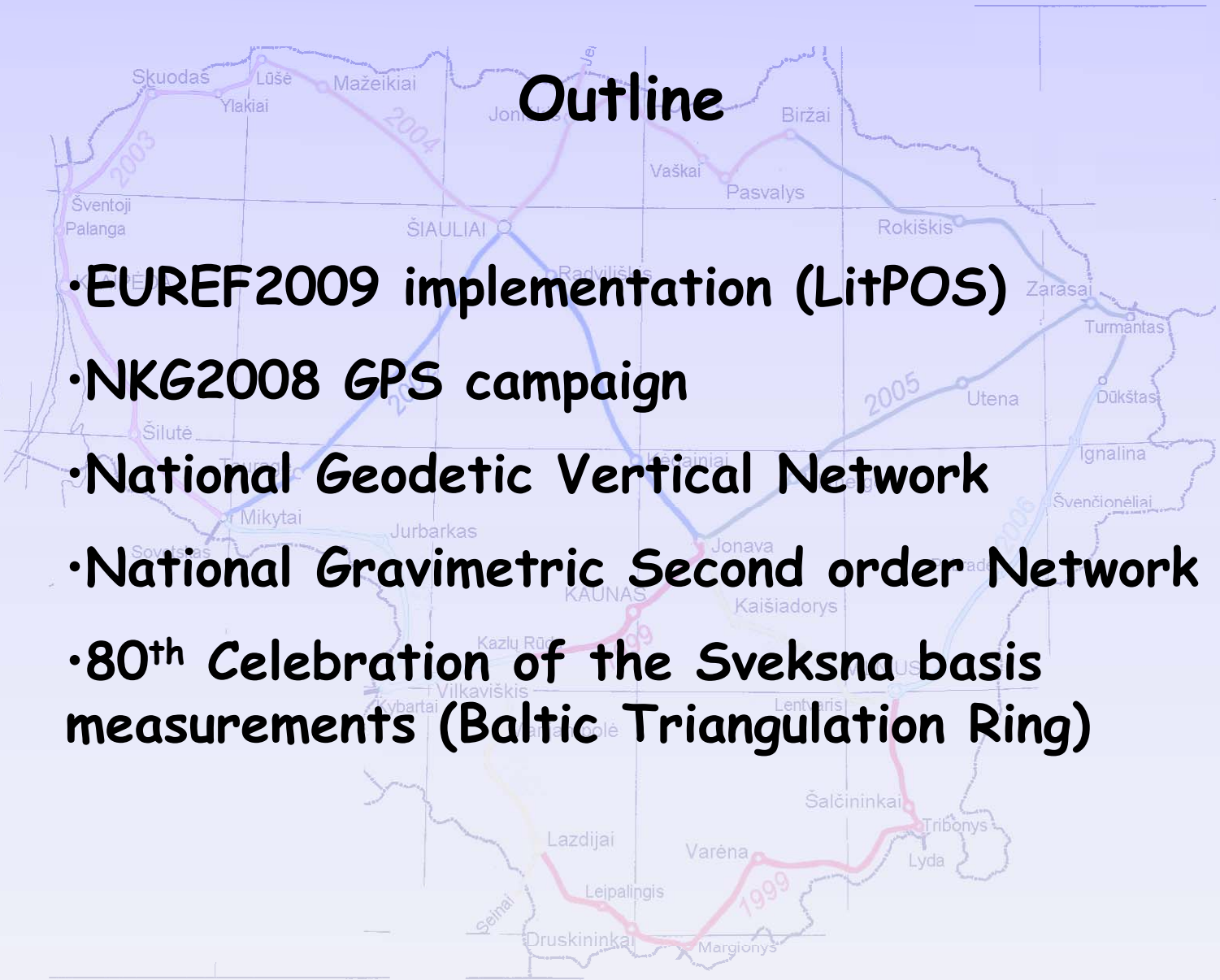
EUREF Symposia, 2009, Florence, Italy

Outline

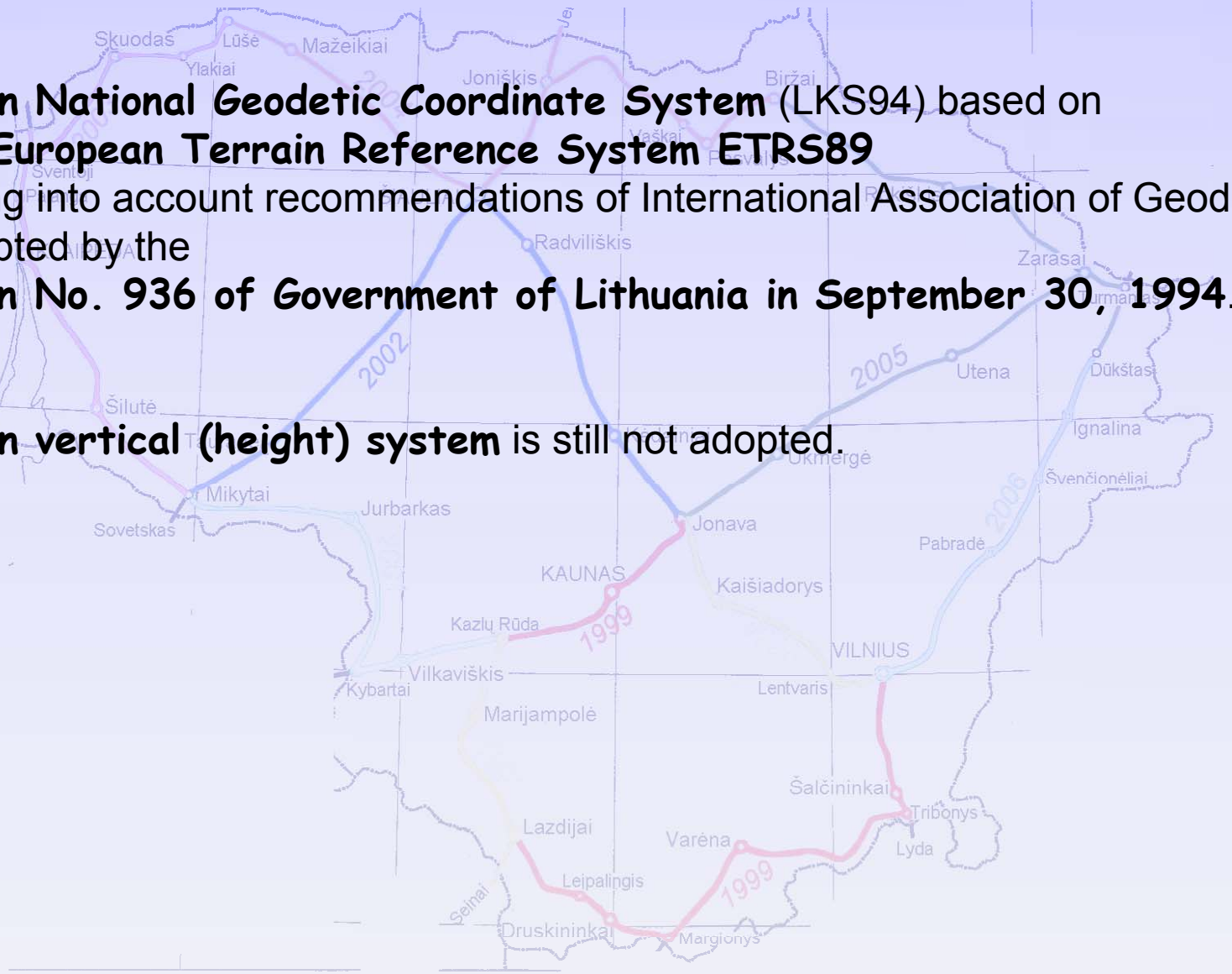


- EUREF2009 implementation (LitPOS)
- NKG2008 GPS campaign
- National Geodetic Vertical Network
- National Gravimetric Second order Network
- 80th Celebration of the Sveksna basis measurements (Baltic Triangulation Ring)

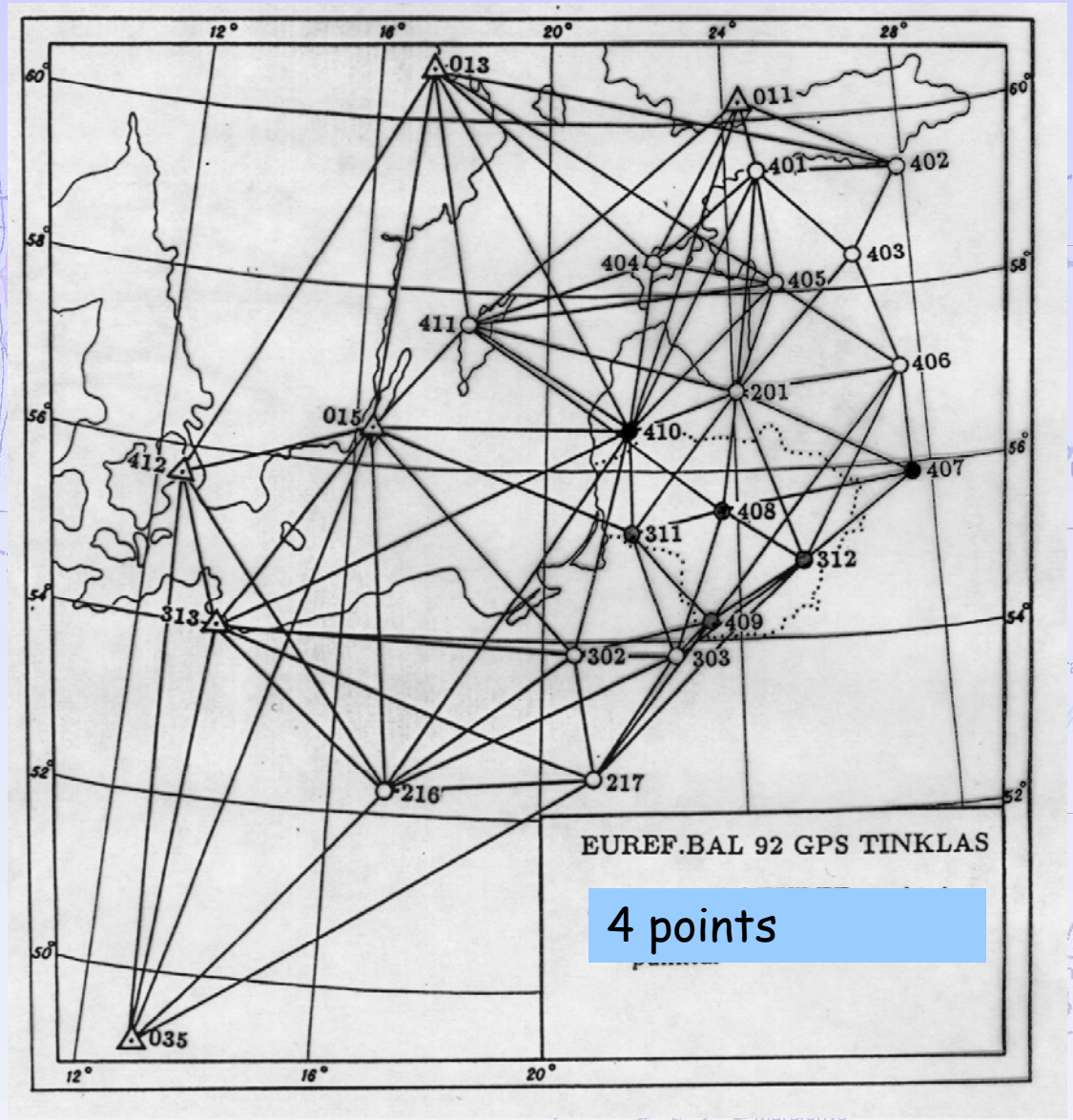
EUREF2009 implementation

Lithuanian National Geodetic Coordinate System (LKS94) based on common **European Terrain Reference System ETRS89**
And, taking into account recommendations of International Association of Geodesy, was accepted by the
Resolution No. 936 of Government of Lithuania in September 30, 1994.

Lithuanian vertical (height) system is still not adopted.



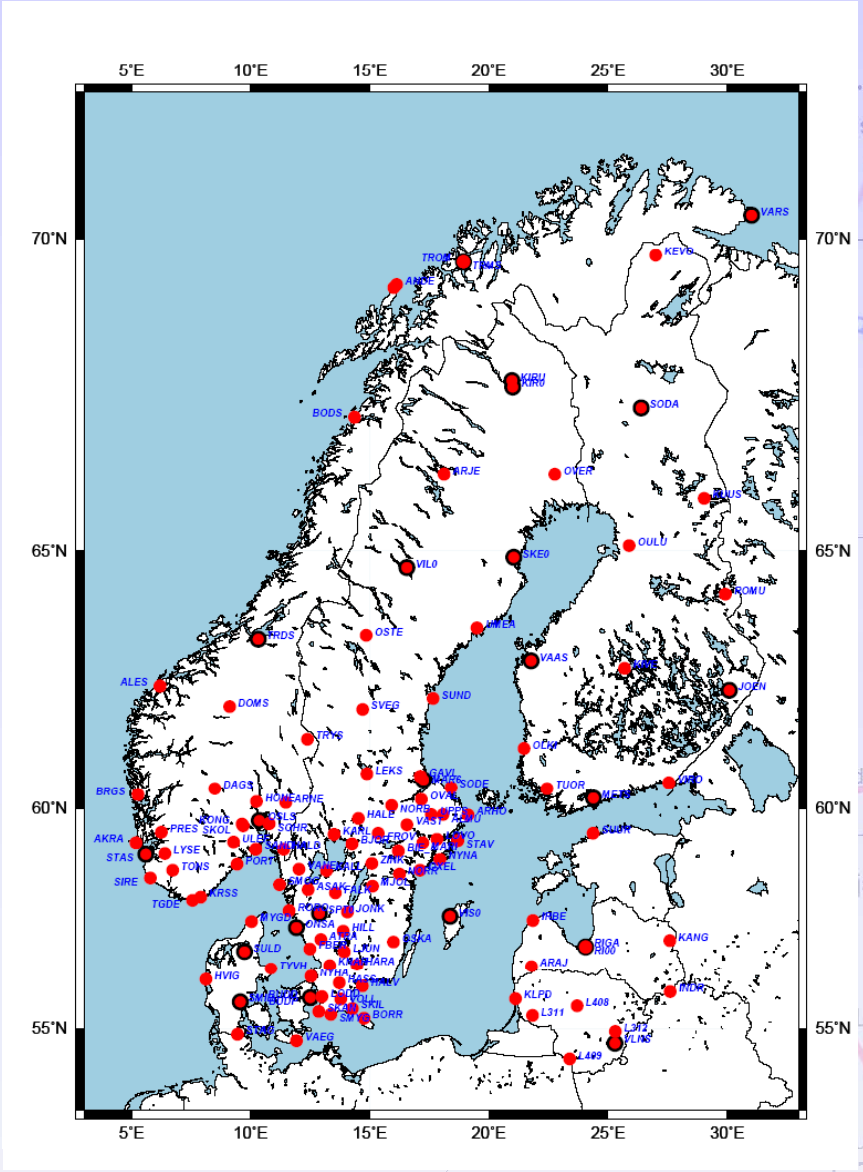
EUREF2009 implementation



EUREF BAL'92 GPS Network (Class "C")

EUREF2009 implementation

NKG 2003 campaign (Class "B")



6 points

Resolutions

of the EUREF Symposium in Riga, 14 – 17 June 2006

Resolution no. 1

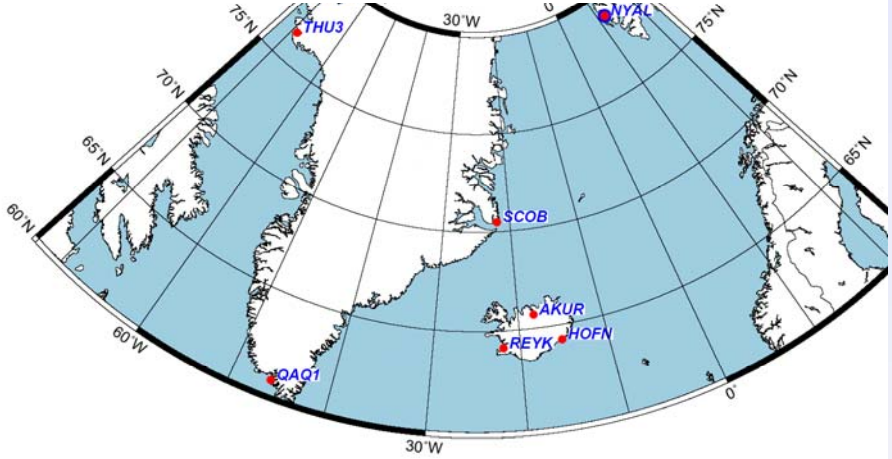
The IAG Reference Frame Sub-commission for Europe (EUREF)

recognising that

- in October 1993 the EUREF-BG-93 campaign in Bulgaria was observed and was reprocessed in 2005,
- in August-September-October 2004 the EUREF-BG-2004 campaign was observed,
- in September-October 2003 the EUREF-NKG-2003 in Scandinavia and the Baltic countries was observed, including points in Latvia and Lithuania, and

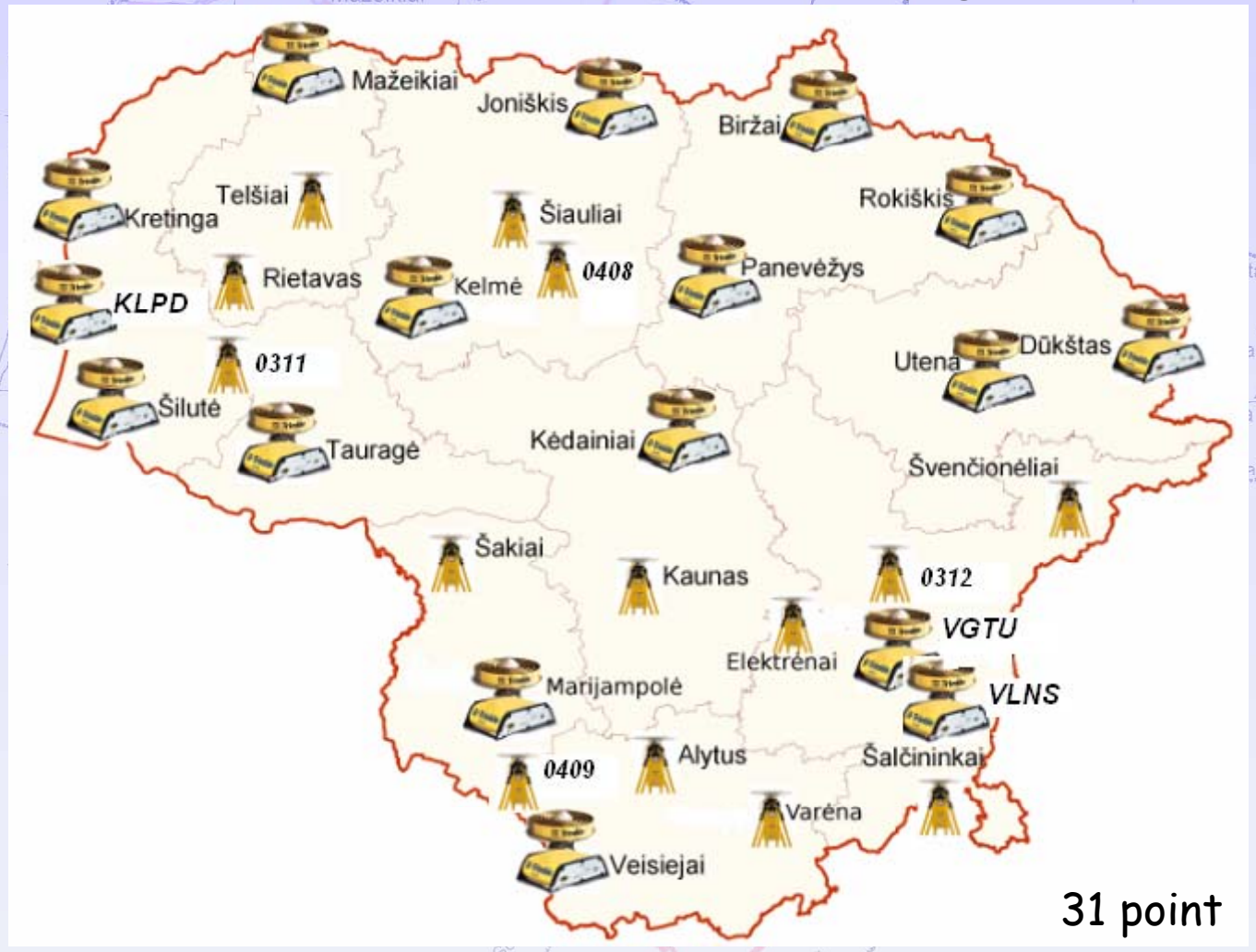
all the results were submitted to the EUREF technical working group, where they were accepted as Class B standard (about 1 cm at the epoch of observation)

endorses the subset of points submitted to the EUREF Technical Working Group as extensions to the current realisation of ETRS89



EUREF2009 implementation

NKG 2008 campaign (maintenance)

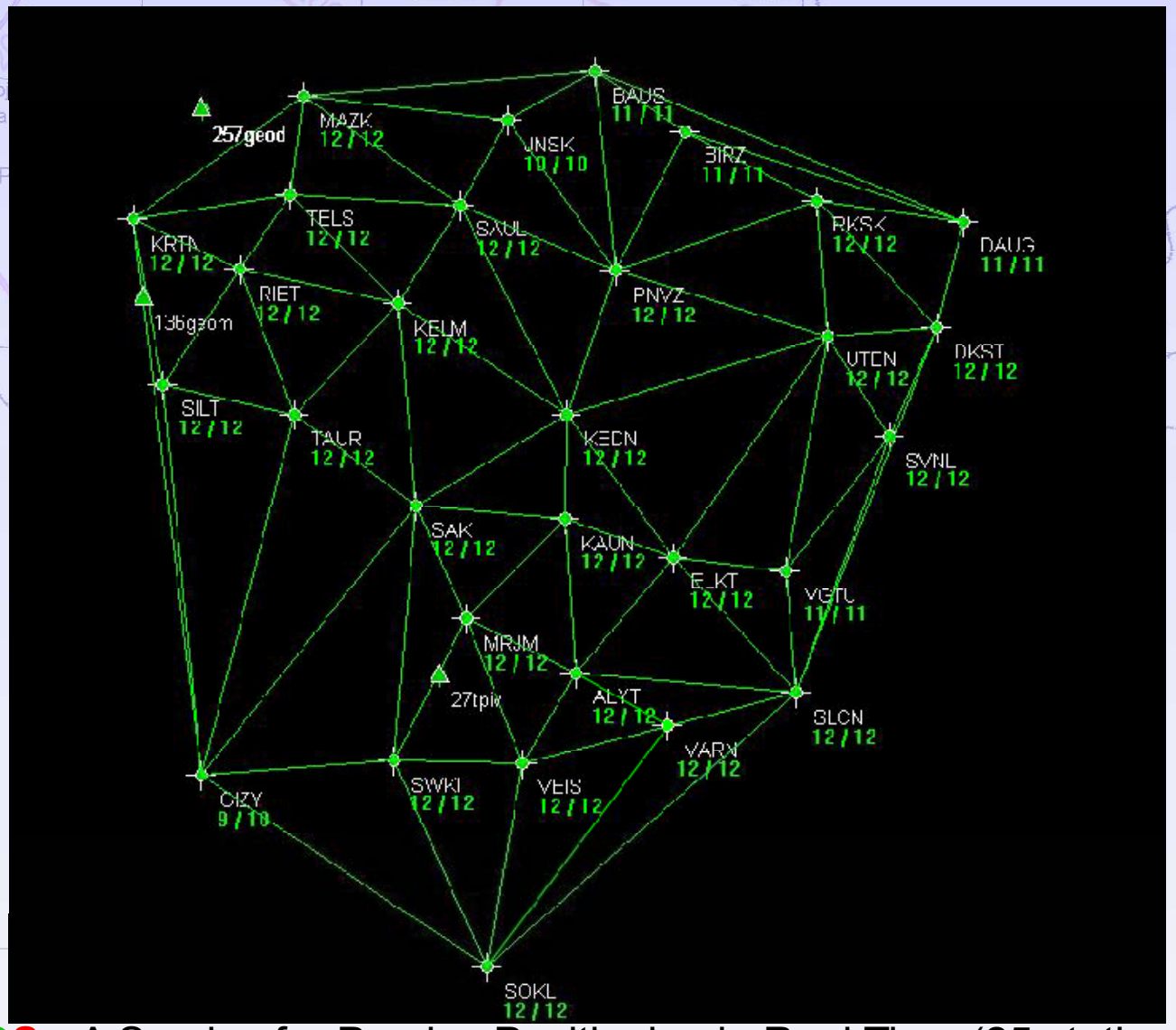


LitPOS - A Service for Precise Positioning in Real Time (25 stations)

EUREF2009 implementation

INSPIRE: INfrastructure for SPatial InfoRmation in Europe

EUPOS® (European Position Determination System)



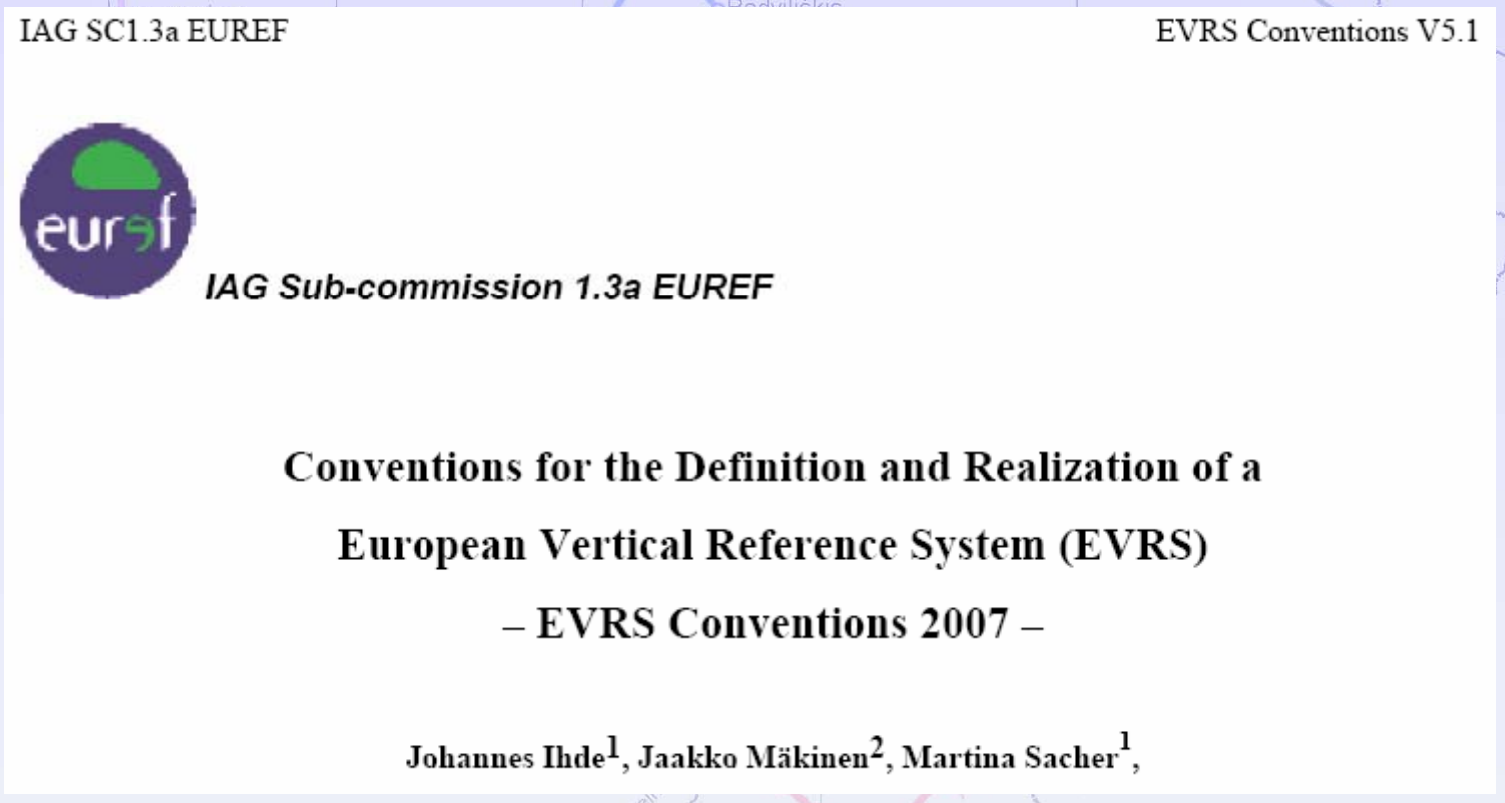
LitPOS - A Service for Precise Positioning in Real Time (25 stations)

National Geodetic Vertical Network (1)

Lithuanian vertical (height) system is still not adopted.

The project of **The Resolution of the Government of Lithuania is prepared!**

It is based on **EVRS Conventions 2007.**



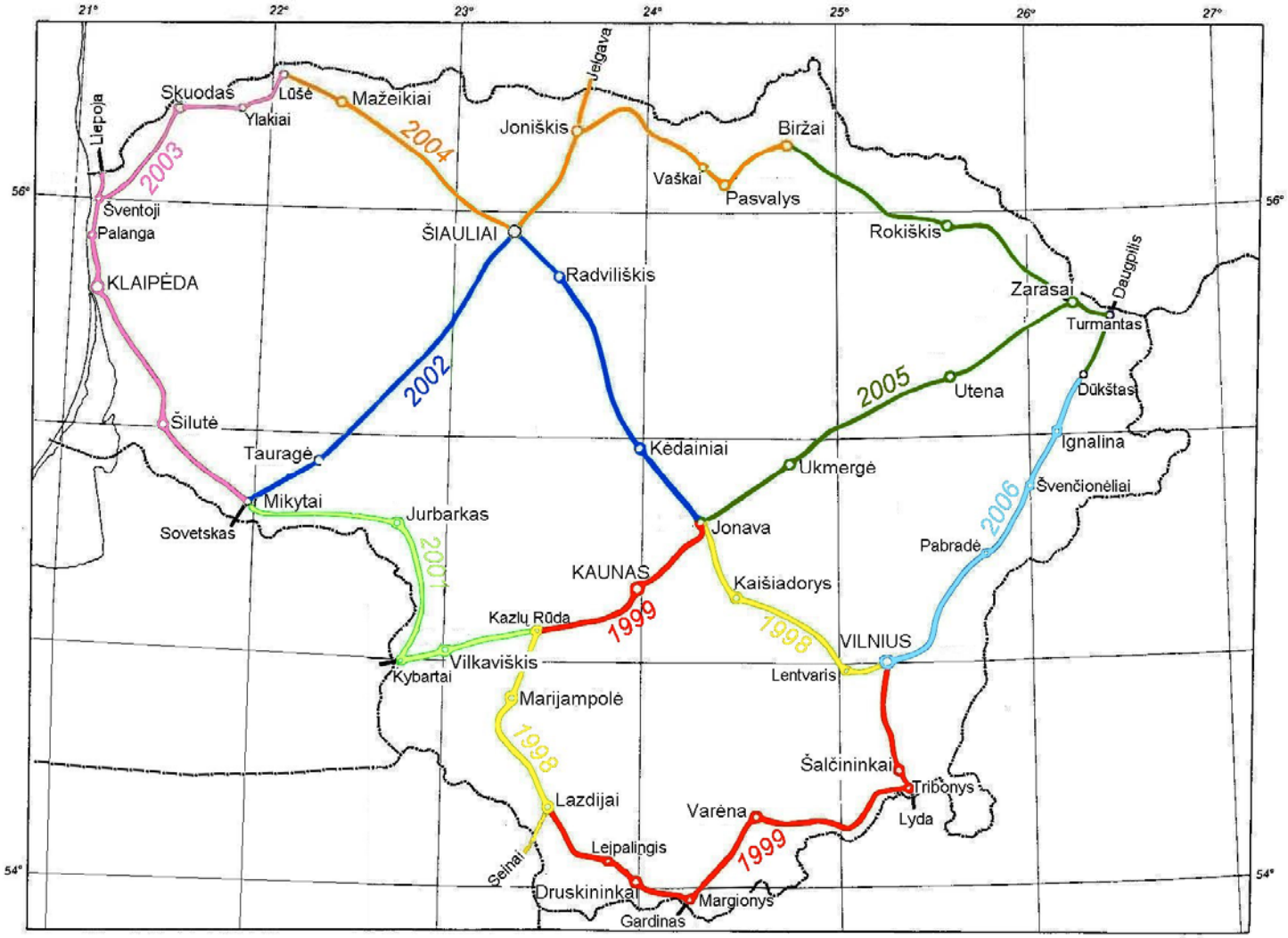
IAG SC1.3a EUREF EVRS Conventions V5.1

IAG Sub-commission 1.3a EUREF

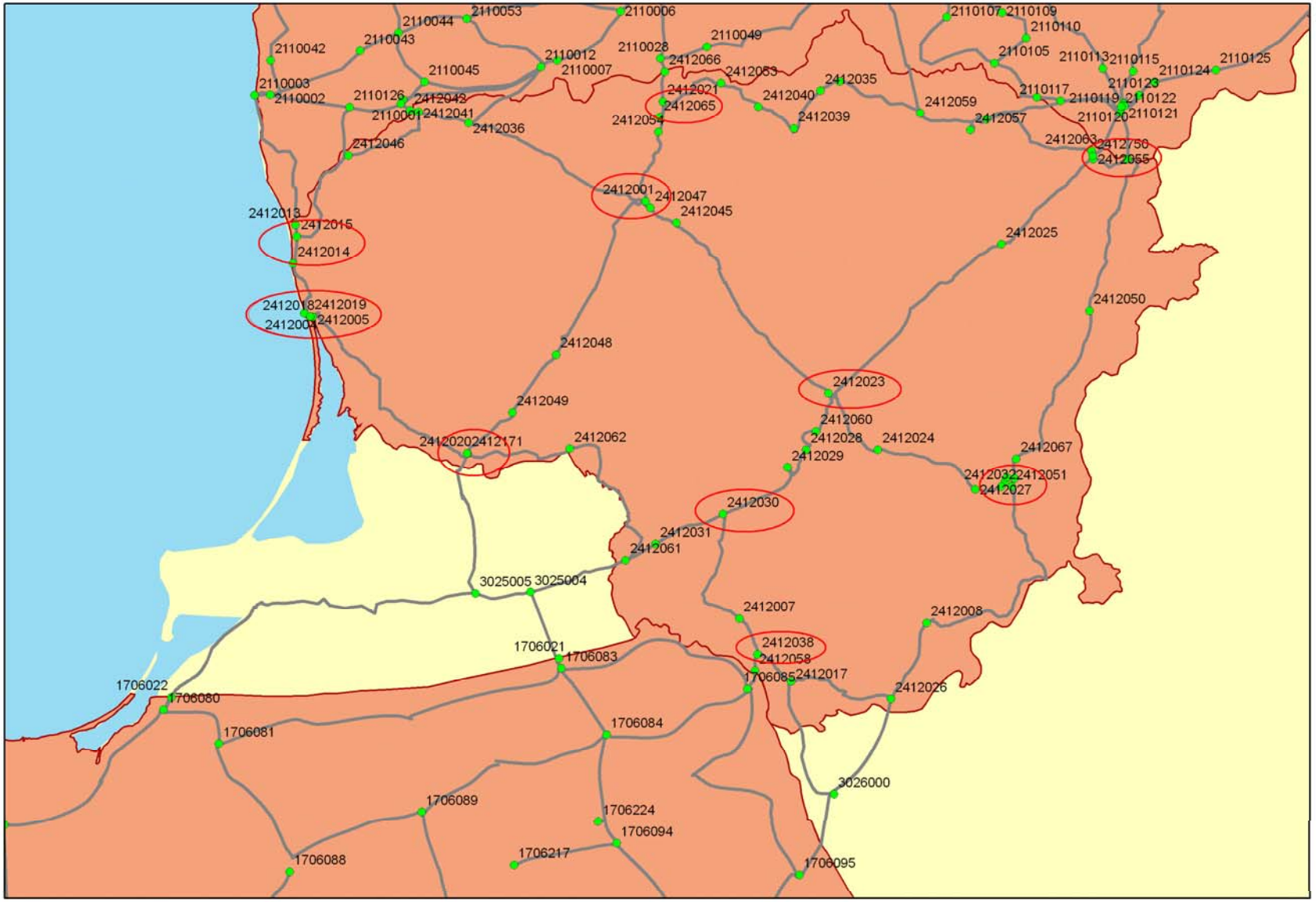
Conventions for the Definition and Realization of a European Vertical Reference System (EVRS) – EVRS Conventions 2007 –

Johannes Ihde[1], Jaakko Mäkinen[2], Martina Sacher[1],

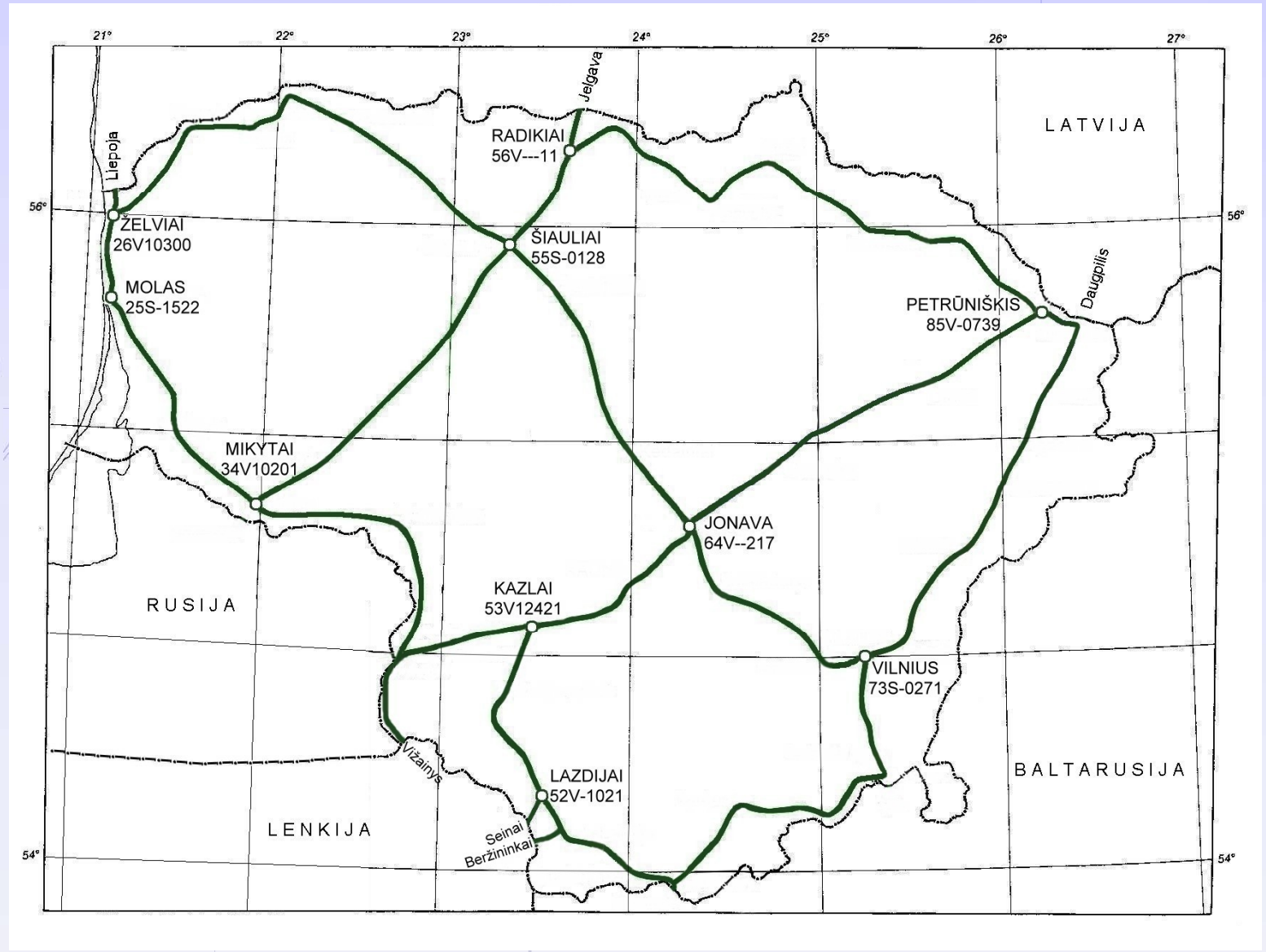
National Geodetic Vertical Network (1)



National Geodetic Vertical Network (3)



National Geodetic Vertical Network (4)



10 datum points

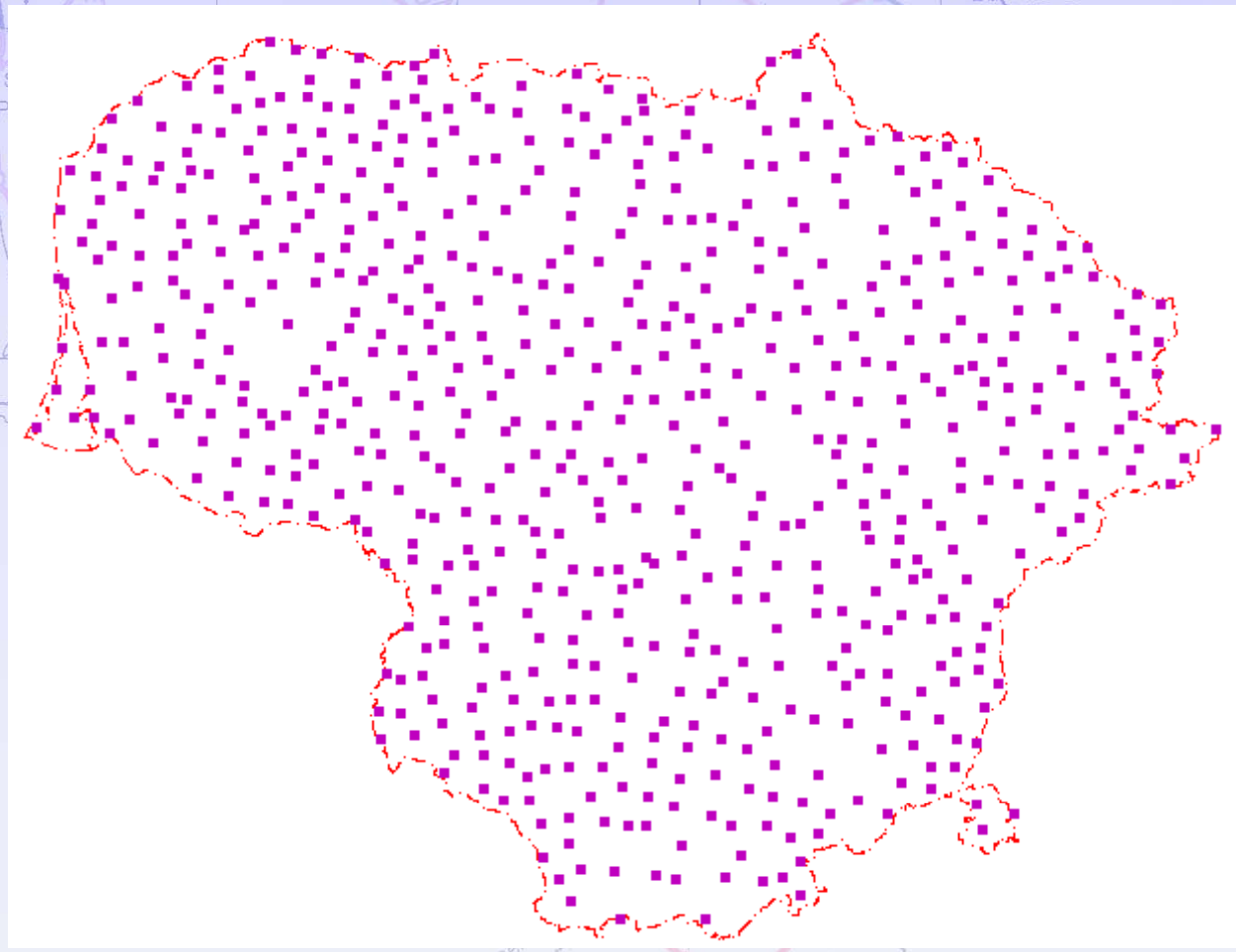
National Geodetic Vertical Network (5)

Data of datum points

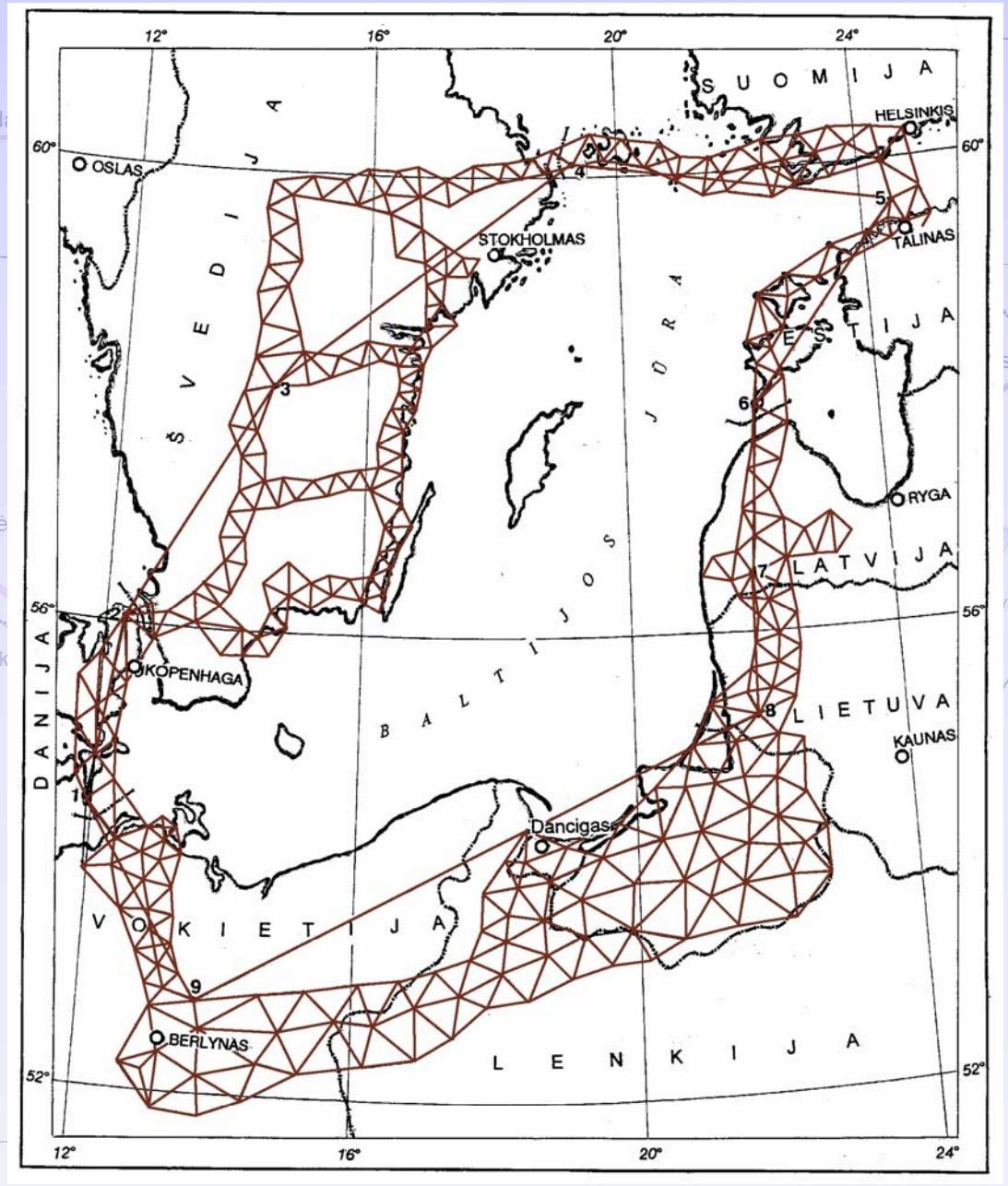
No.	Name	National code	UELN code	LKS94 coordinates	Geopotential number, $m^2 \cdot s^{-2} \cdot 10^{-1}$	Accuracy of geopotential number in UELN network, $m^2 \cdot s^{-2} \cdot 10^{-1}$	Normal height, m	LSS07 gravity acceleration, $m \cdot s^{-2}$
1	ŠIAULIAI	55S-0128	2412001	55°54'48,78202" 23°22'17,18605"	138,795	0,0127	141,402	9,815339
2	VILNIUS	73S-0271	2412002	54°39'11,30417" 25°17'55,19158"	211,797	0,0128	215,801	9,814334
3	MOLAS	25S-1522	2412004	55°43'47,23801" 21°04'58,88606"	4,590	0,0136	4,676	9,815498
4	ŽELVIAI	26V10300	2412015	56°00'41,96954" 21°06'51,86654"	9,126	0,0138	9,297	9,815762
5	MIKYTAI	34V10201	2412020	55°07'54,06812" 21°57'34,81749"	16,370	0,0116	16,678	9,814947
6	JONAVA	64V--217	2412023	55°05'55,95392" 24°16'20,64503"	67,575	0,0122	68,848	9,814745
7	KAZLAI	53V12421	2412030	54°44'43,61659" 23°28'14,25382"	63,884	0,0112	65,090	9,814756
8	LAZDIJAI	52V-1021	2412038	54°13'18,96189" 23°30'43,65627"	129,529	0,0105	131,981	9,814077
9	PETRŪNIŠKIS	85V-0739	2412055	55°43'08,70335" 26°14'41,29362"	142,250	0,0136	144,924	9,815321
10	RADIKIAI	56V---11	2412065	56°12'13,21889" 23°34'03,21221"	59,636	0,0134	60,754	9,815793

Gravimetric Networks – current works and future plans

Lithuanian National Gravity Second Order Network (about 600 points)
(2007-2009)



Baltic Triangulation Ring



Baltic Triangulation Ring

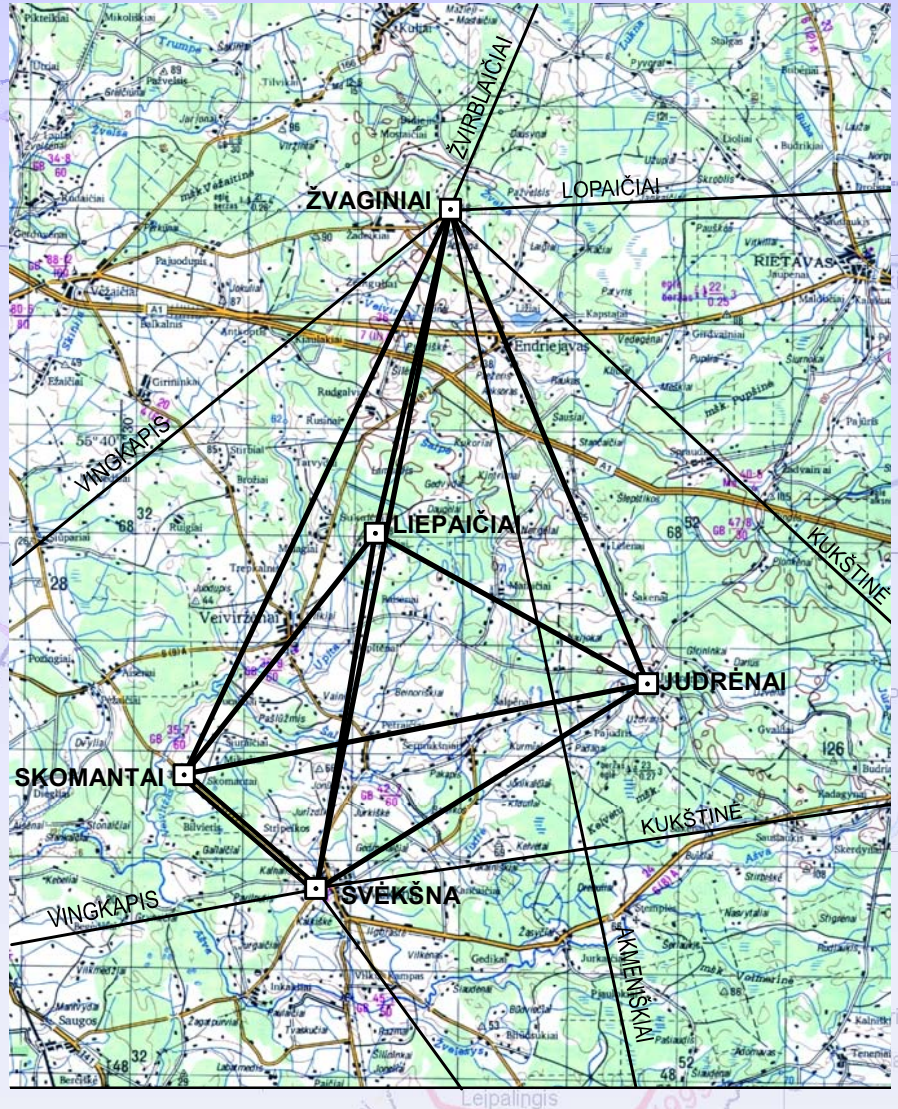
Sveksna basis was measured in **June 3–9, 1929**.
The measurements were carried out by the international team of the Baltic Geodetic Commission:
Dr. U. Pesonen (Finland) – team leader;
MsC. Ö. Burrau (Denmark);
Asist. N. Jonsson (Sweden);
Eng. T. Szymanski (Poland);
Local specialists.

Length of Sveksna basis

***B* = 6466 m + 345,30 mm ±0,74 mm.**

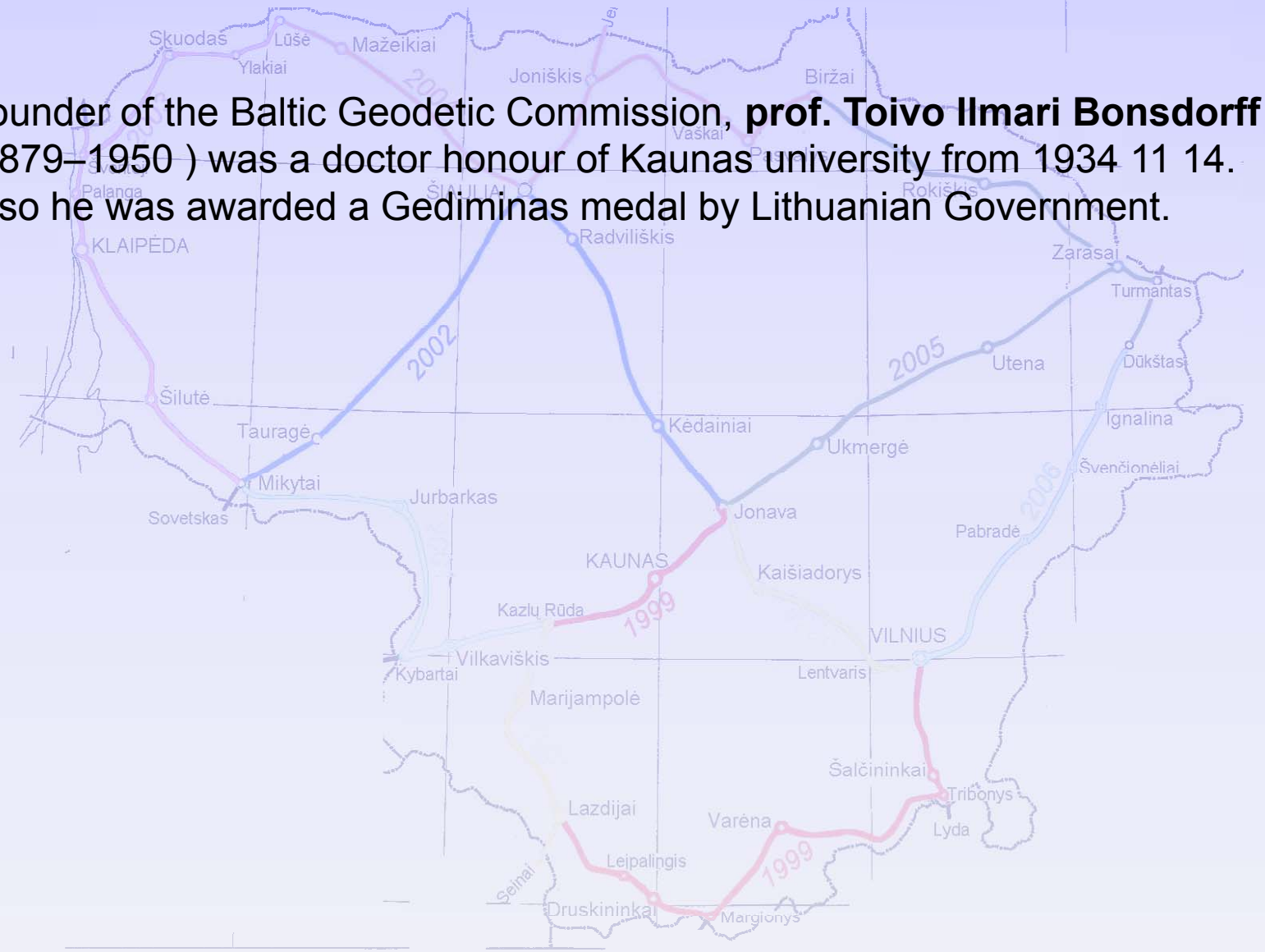
1:8 700 000

Baltic Triangulation Ring



Baltic Triangulation Ring

Founder of the Baltic Geodetic Commission, **prof. Toivo Ilmari Bonsdorff** (1879–1950) was a doctor honour of Kaunas university from 1934 11 14. Also he was awarded a Gediminas medal by Lithuanian Government.

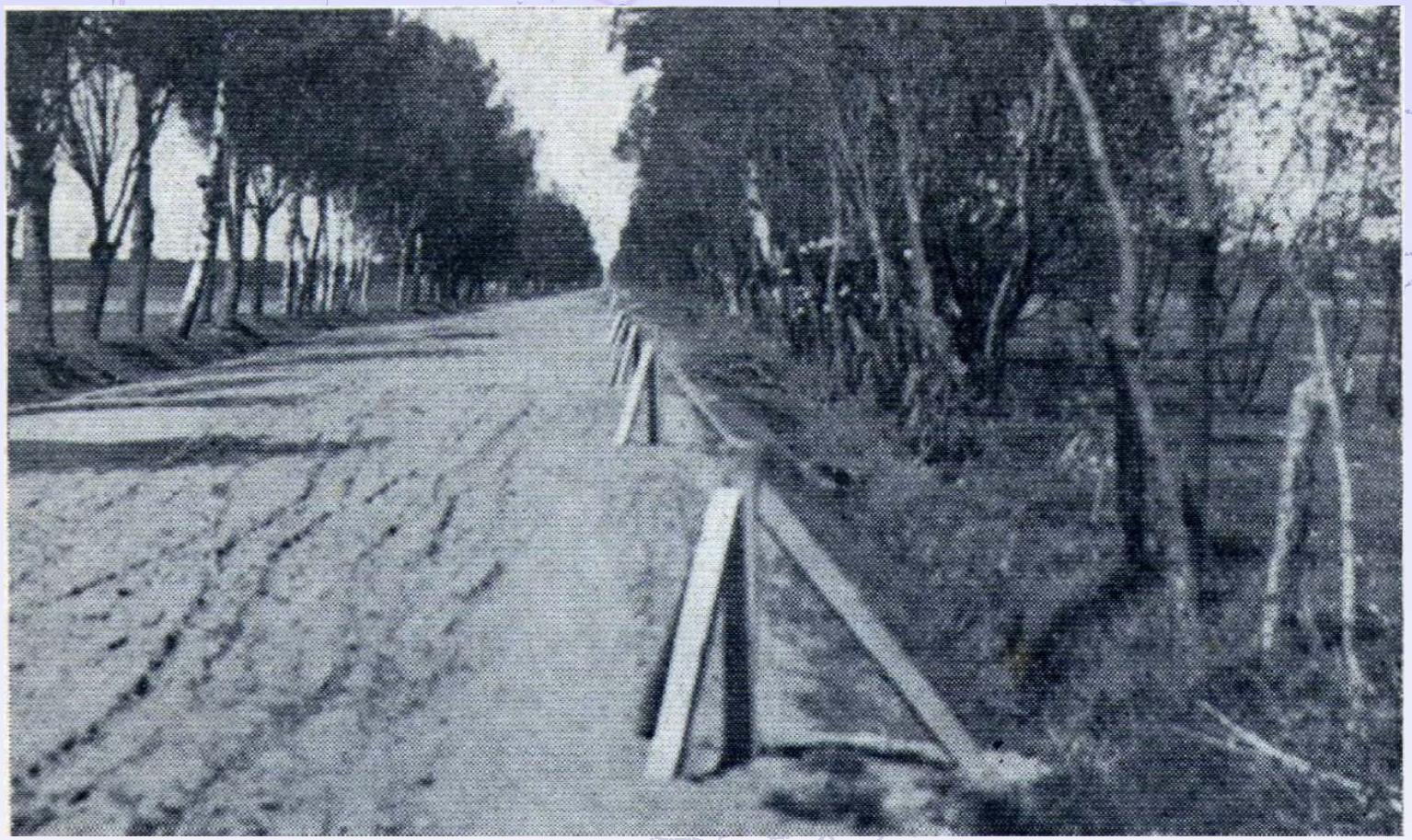


Baltic Triangulation Ring

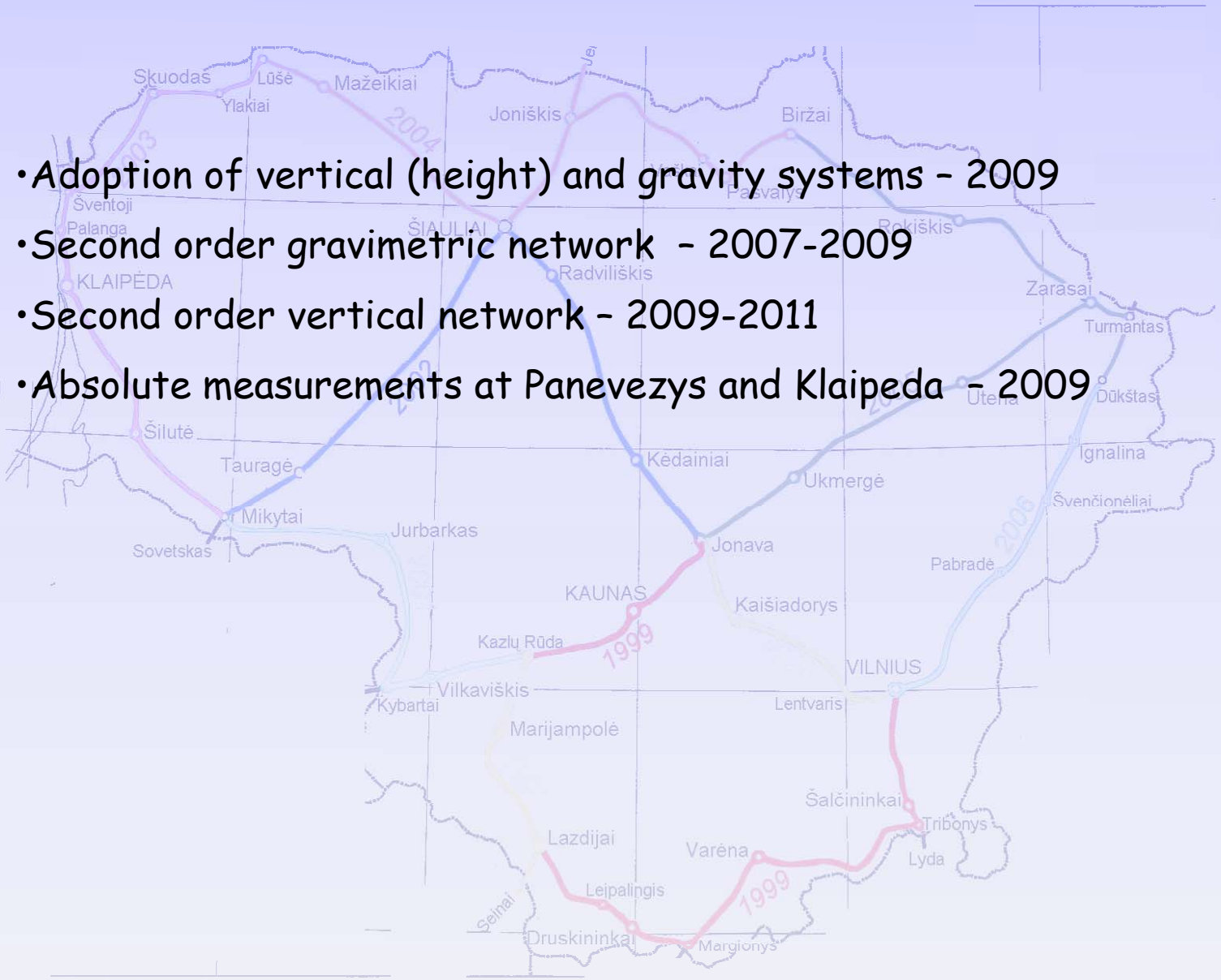
Two end-points of Sveksna basis are in the list of the Culture heritage of Lithuania from 2004.

Baltic Triangulation Ring

Conference, dedicated to the Baltic Triangulation Ring Sveksna basis geodetic measurements, will be held in Sveksna gymnasium in June 5, 2009. Everybody is welcome!



Future plans



- Adoption of vertical (height) and gravity systems – 2009
- Second order gravimetric network – 2007-2009
- Second order vertical network – 2009-2011
- Absolute measurements at Panevezys and Klaipeda – 2009

Thanks…

Thank you for your attention!