Service Quality Monitoring

Working group status

Ing. Karol Smolík

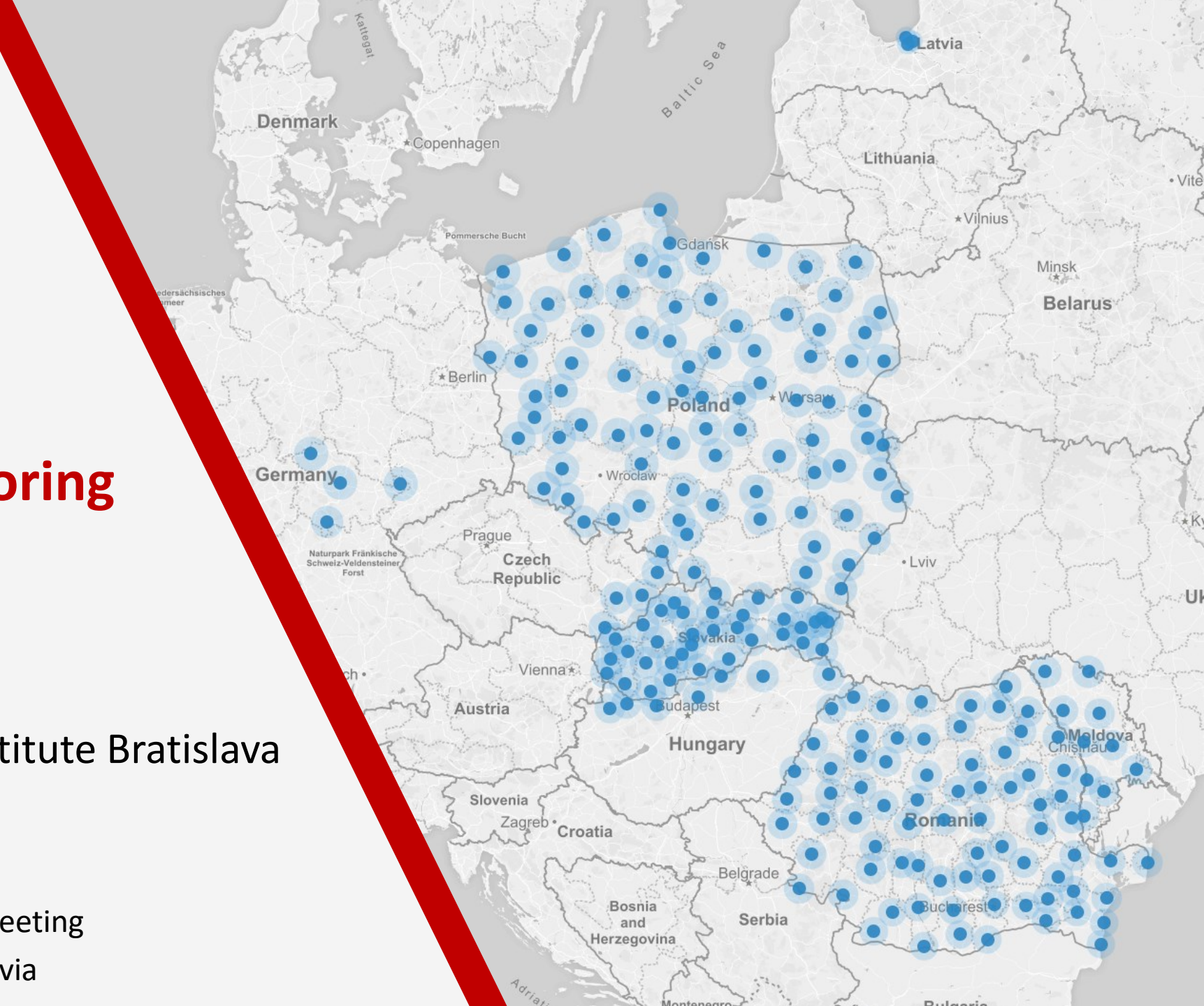
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Geodetic and Cartographic Institute Bratislava

EUPOS
European Position Determination System

9th EUPOS Council and Technical Meeting

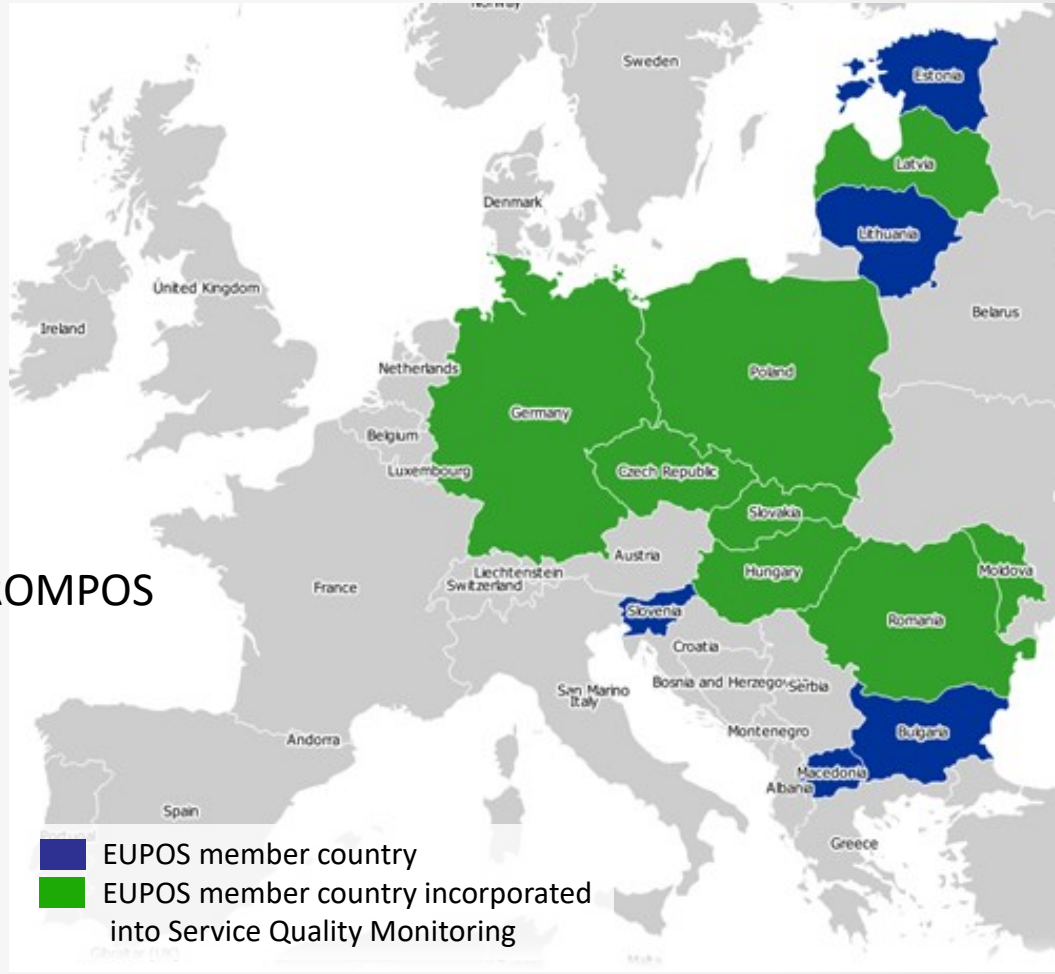
November 22-23 2023, Riga, Latvia



EUPOS WG on Service Quality Monitoring

- Working group members
  - Karol Smolík (Slovakia) - chair
  - Branislav Droščák (Slovakia)

- WG cooperators No new member
  - Szymon Wajda (Poland) – ASG-EUPOS
  - István Galambos (Hungary) – gnssnet.hu
  - Vlad Sorta, Miluta Flueras, Victor Crasnopolschi (Romania) – ROMPOS
  - Christian Trautvetter (Germany) – SAPOS
  - Rolands Pinta (Latvia) – EUPOS-RIGA
  - Alexandr Mihailov (Moldova) – MOLDPOS
  - Jan Řezníček (Czech Republic) – CZEPOS



EUPOS service quality monitoring Status (November 2022)

SKPOS	35 stations
ASG eupos	87 stations
GNSSnet.hu GNSS SZOLGÁLTATÓ KÖZPONT	7 stations
ROMPOS Romanian Position Determination System	75 stations
SAPOS	4 stations
RIGA EUPOS	3 stations
MOLDPOS	10 stations
CZEPOS	4 stations
	225 stations

GNSS receiver manufacturers

- Trimble
- Leica
- Topcon
- Javad
- Astech

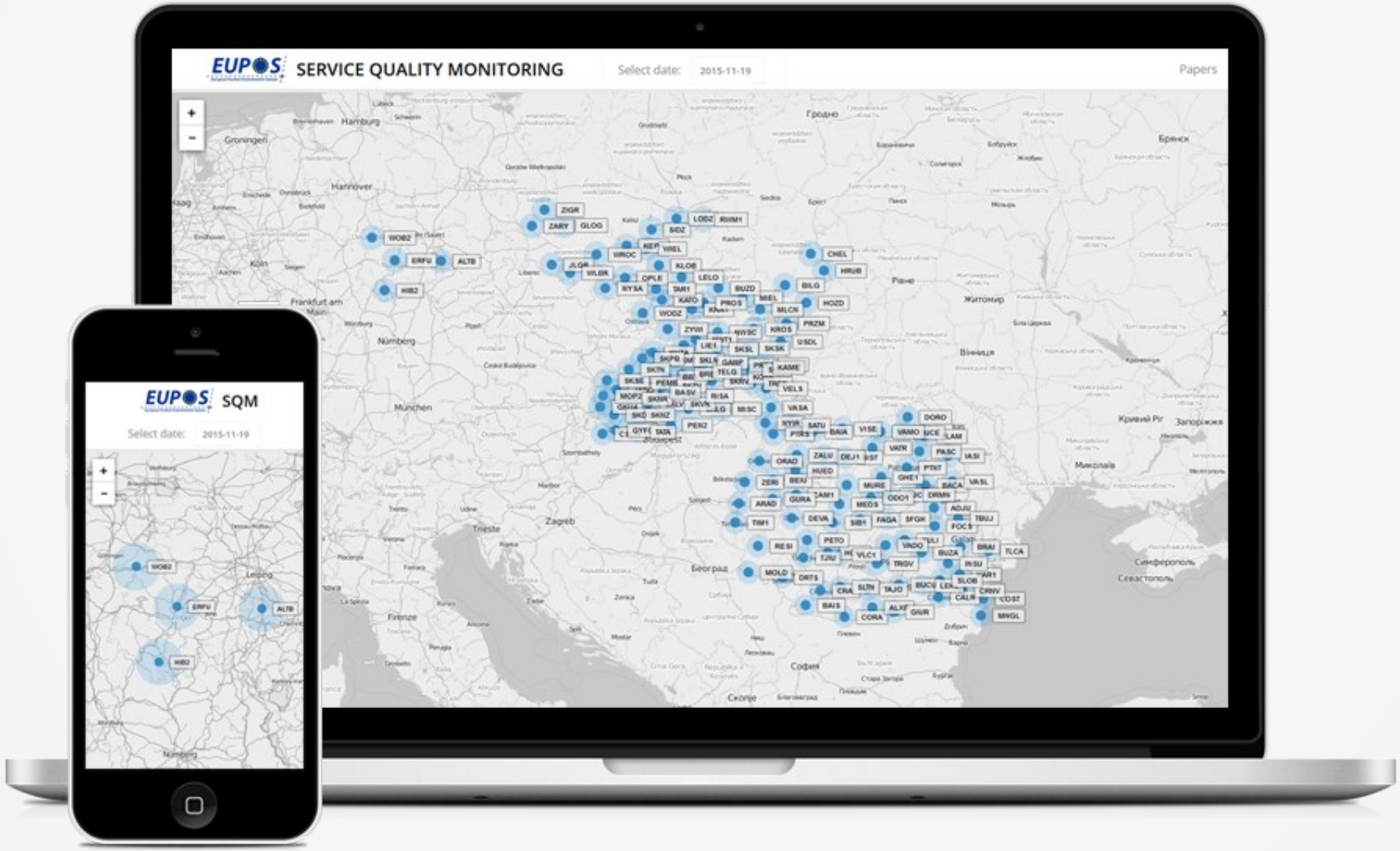
Network softwares:

- Trimble Pivot Platform
- Geo++ GNSMART
- Leica Spider

EUPOS service quality monitoring

User interface

http://monitoringEUPOS.gku.sk



EUPOS networks deviations comparison Statistics

RTK network		SKPOS	ASG eupos	SAPOS	ROMPOS	MOLDPOS	CZEPOS	GNSSnet.hu	RIGA EUPOS	EUPOS
Control Software		Trimble Pivot Platform			Leica Spider			Geo++ GNSMART		Σ
Time period		10 years	9 years	8 years	9 years	6 years	5 year	9 years	8 years	
Number of monitored stations		35	87	4	75	10	4	7	3	225
Maximal	ne	49.9 cm	46.8 cm	51.9 cm	49.8 cm	41.3 cm	38.4 cm	49.1 cm	49.8 cm	
	u	49.8 cm	49.3 cm	48.8 cm	49.9 cm	43.5 cm	47.9 cm	69.9 cm	59.9 cm	
Average	ne	1.0 cm	1.0 cm	0.9 cm	1.2 cm	1.1 cm	0.8 cm	1.0 cm	1.1 cm	1.0 cm
	u	2.4 cm	1.2 cm	1.9 cm	2.4 cm	1.5 cm	2.8 cm	1.3 cm	2.1 cm	2.0 cm
No fix		13%	7%	8%	15%	28%	10%	12%	20%	14%

Plans to next year

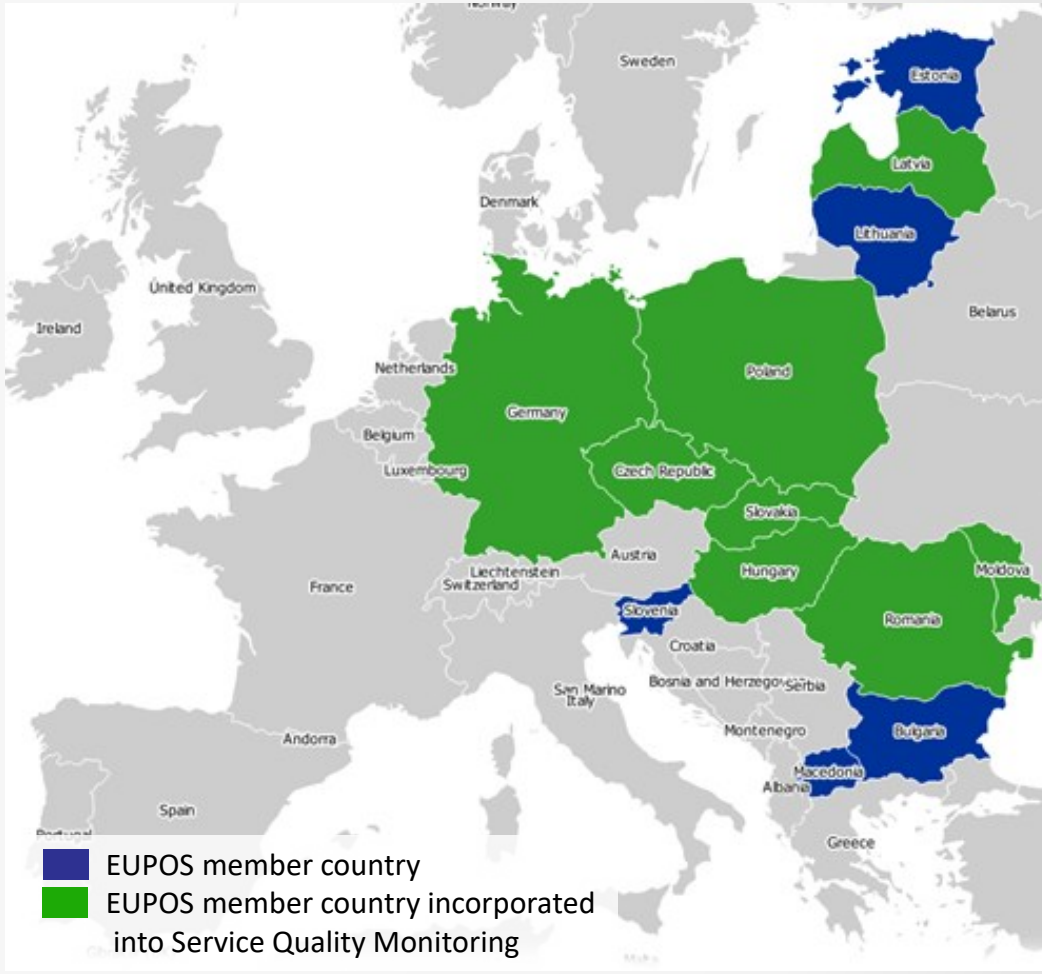
- Comparison of the virtual principle with the new physical station in Slovakia
- Migration to a new server

Summary

- EUPOS network RTK quality monitoring tool works right
- tool is available for public on http://monitoringEUPOS.gku.sk
- results from the monitoring confirm „cm“ quality of EUPOS countries network RTK
- we plan to continue our activity and do more analysis in future

Join us - join EUPOS SQM!

- What you will get?
  - feedback about quality of your service
  - comparison of your service with other countries
- E-mail contact:
  - karol.smolik@skgeodesy.sk
- What we need for joining:
  - login and password which allows us to get
    - access to the network RTK solution (VRS concept)
    - access to permanent stations via NTRIP Caster
  - corrections provided in RTCM 3.x format
  - CORS coordinates



Thank you for your attention

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