

Ministry of Justice of Georgia National Agency of Public Registry (NAPR)



**EUREF
Symposium 2012
Paris**

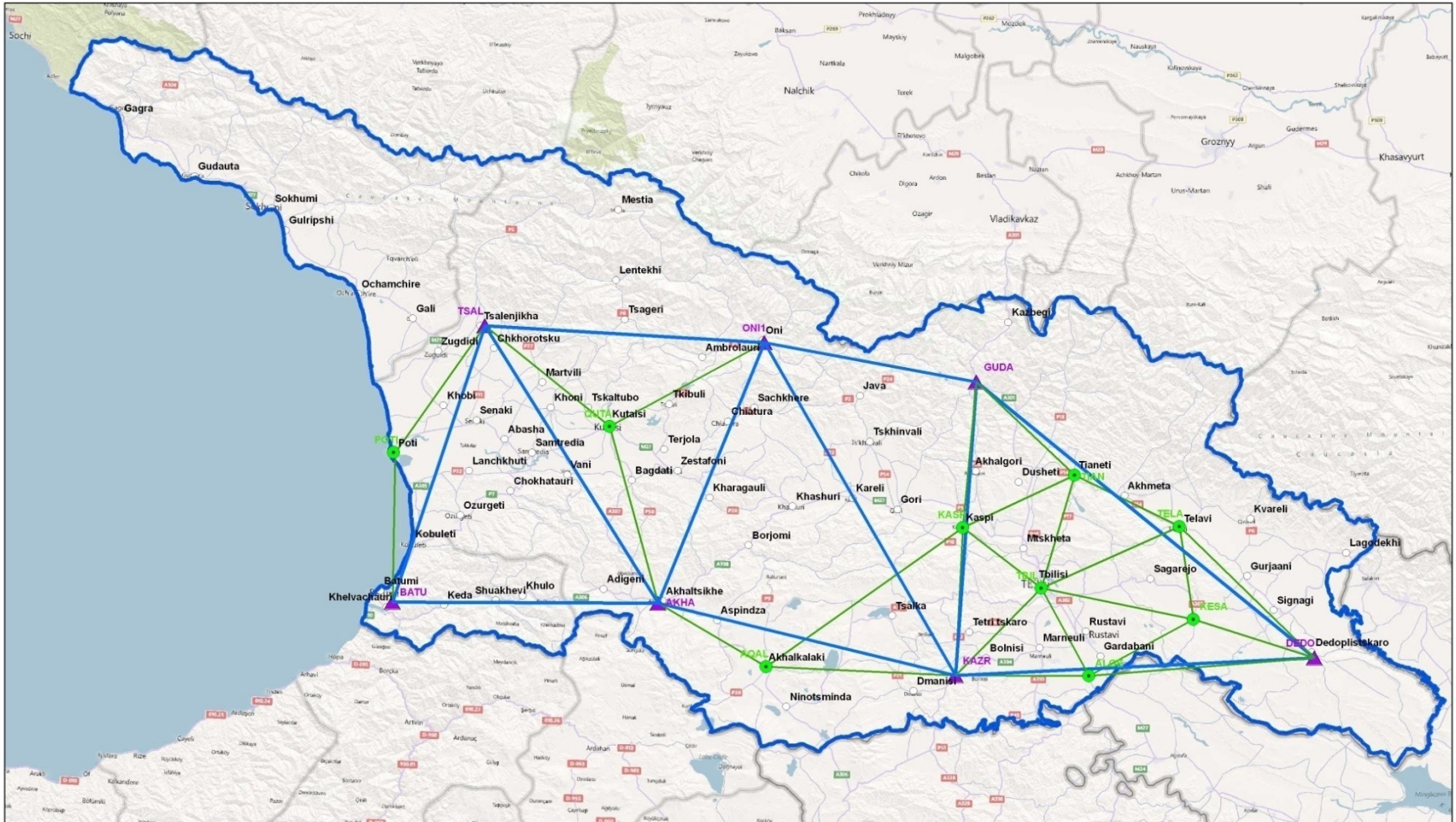
National report

**Head of Geodesy and Cartography Division
Galaktion Hahubia**

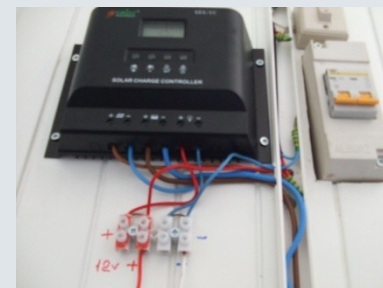


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16 A&B-class stations



7 A-class stations



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9 B-class stations



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Antenna and Receiver



14 Leica GNSS AR25 with individual calibration 14 Leica GRX1200+

Antenna IGS Name

Phase Center Offset(East, North, Up)

LEIAR25.R3 LEIT

L1 0.0002 0.0001 0.1617

L2 0.0002 -0.0006 0.1588

LEIAR25.R4 LEIT

L1 0.0006 0.0010 0.1583

L2 0.0001 0.0001 0.1540



▪ 1 Trimble GNSS R8

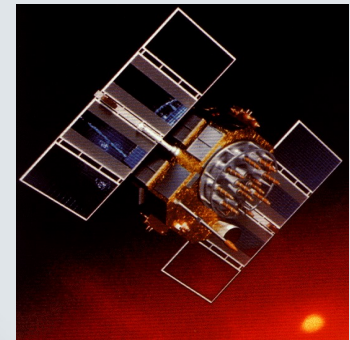
▪ 1 Trimble GPS NETRS



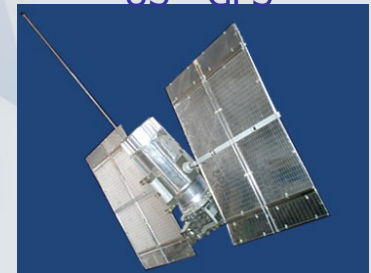
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GNSS signals

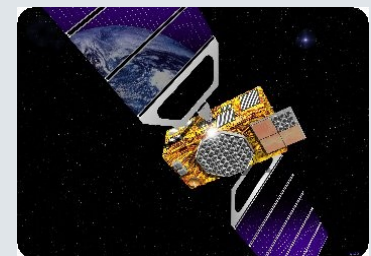
- Navstar/GPS – USA all
- GLONASS – Russia 15
- Galileo – EU (in a futures) 14



US - GPS



Russia - GLONASS

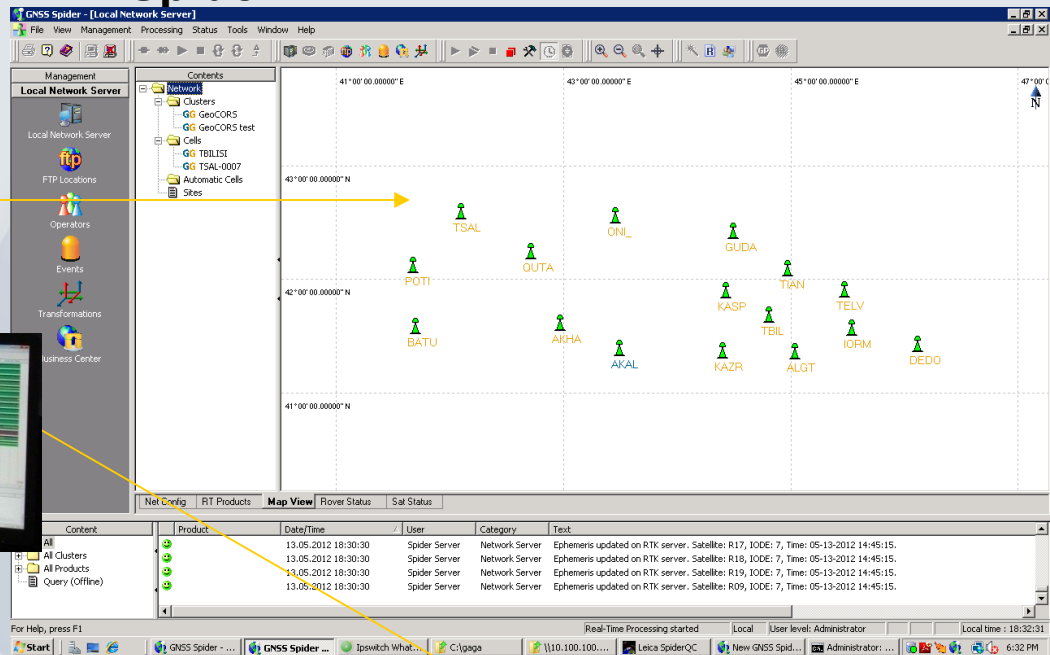
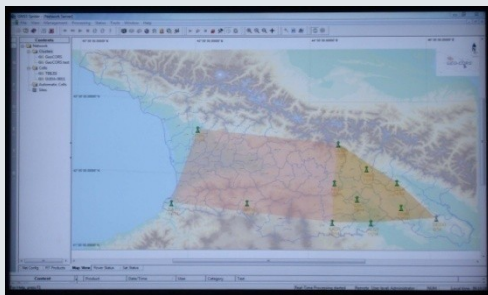


EU - Galileo

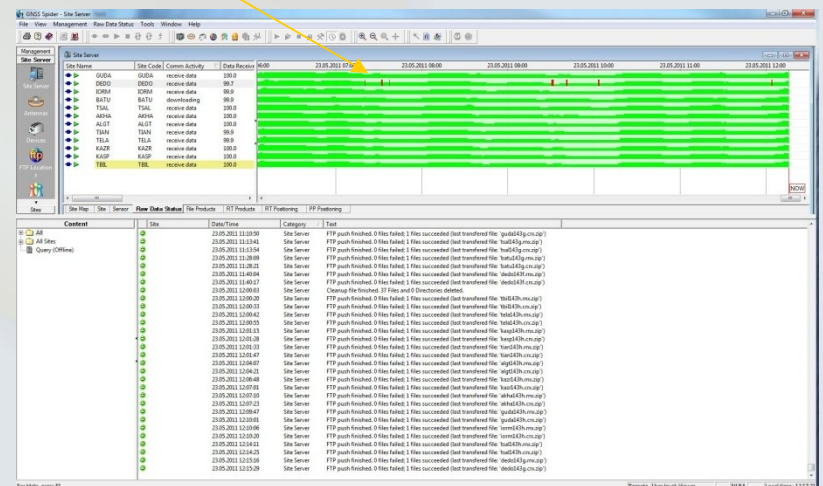


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Control Center Spider



- RINEX 30 sec all time
- RINEX 5 sec 1 year
- RINEX 1 sec 6 month



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GeoCORS services

- Positioning services:

- Positioning in Real-Time

- Positioning via Rinex file download from SpiderWeb server

- Automatic computation in SpiderWeb server

- Business center

- Registration

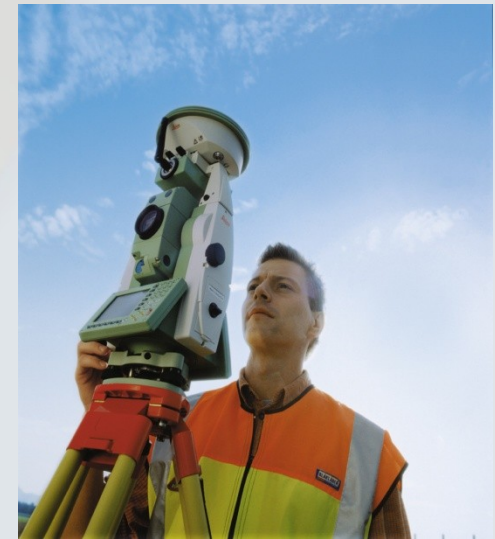
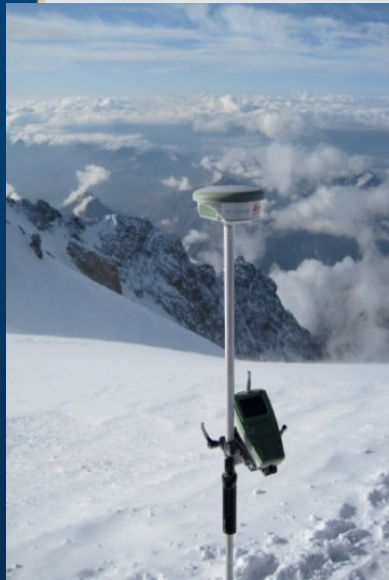


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SUMMARY OF BENEFITS

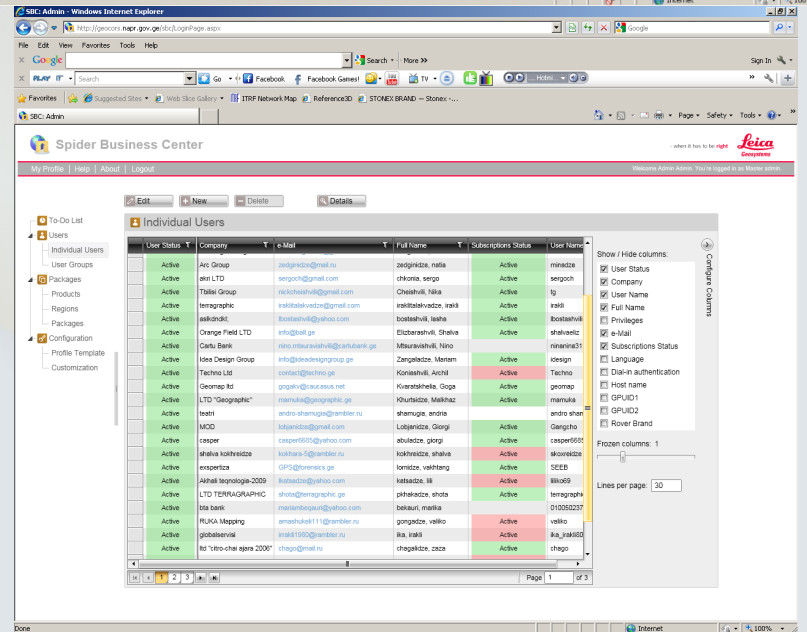
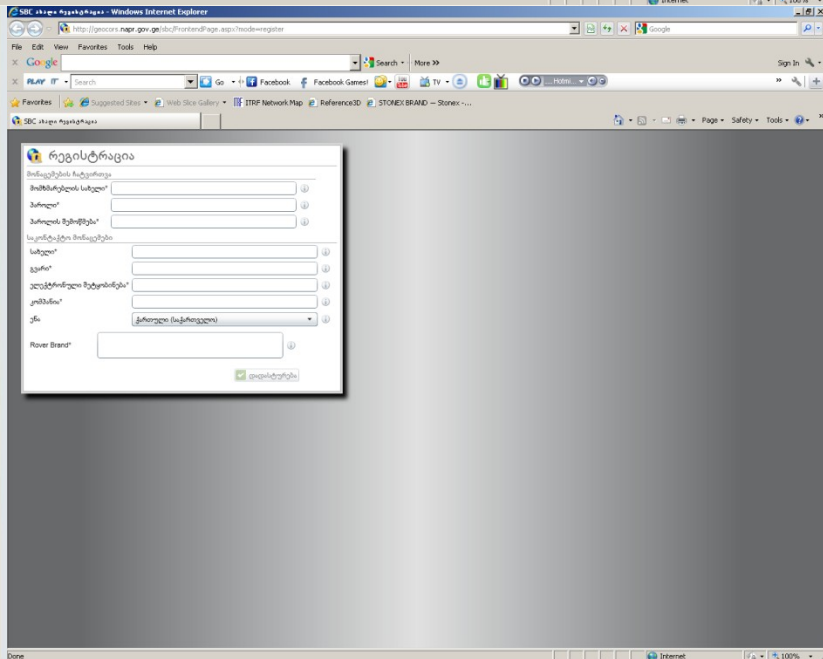
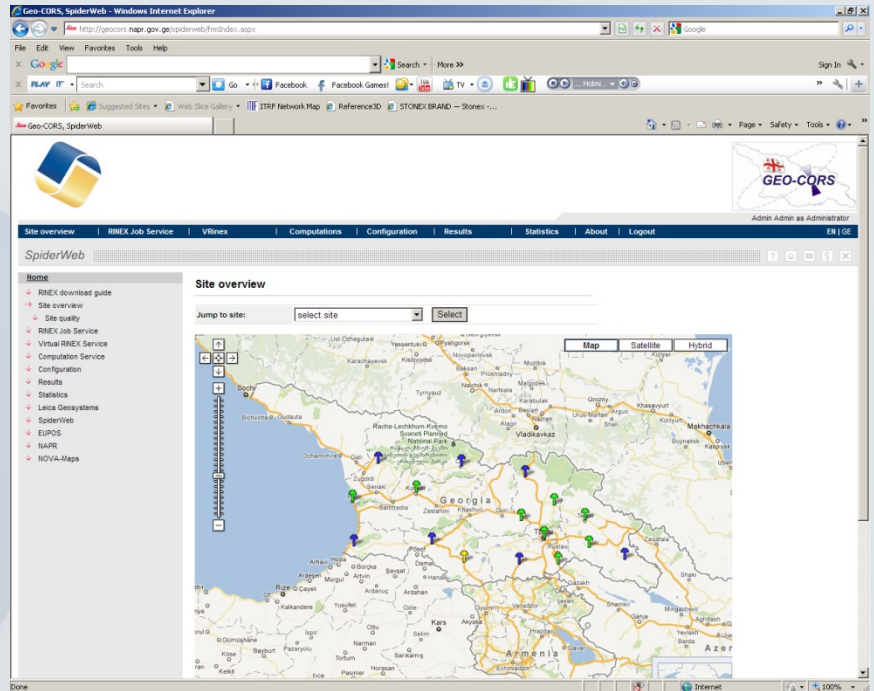
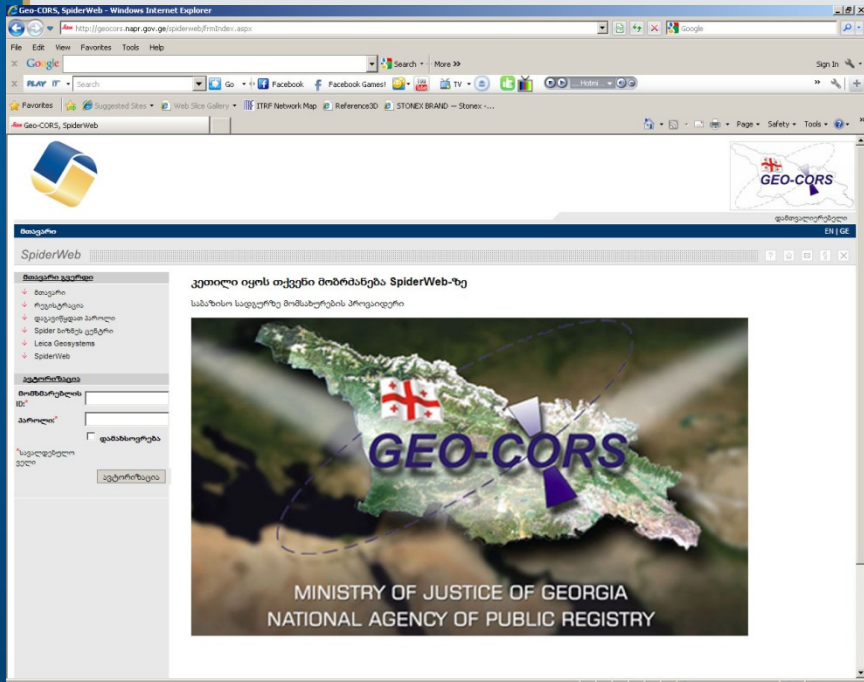
- Continuous operation 365/24/7
- Provides data & corrections in consistent national datum
- Provides positioning with higher accuracy reliability everywhere in Georgia
- Allows center control and monitoring all station
- Provides fundamental infrastructure for all positioning in Georgia
- Full control on all Surveys / Users





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geocors.napr.gov.ge



Last Connection: 2012/05/11
10:50:10.00

Authorised Connections: 9,072

Unauthorised Connections: 5

Connections shown in map: 1,614

Customers: 49

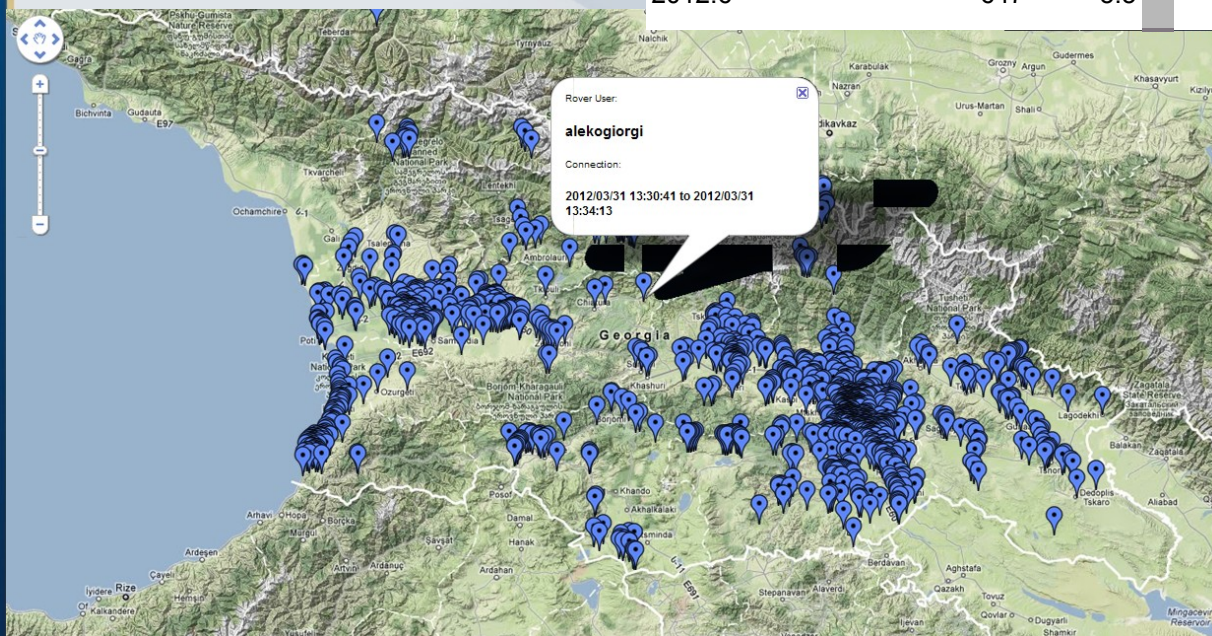
Products: 17

Skipped Records: 21

Total Connection Time: 2,276.6 hrs

Average Connection Time: 15.1 min

Month	Authorised Connections	Authorised Connections (%)		Total Connection Time (hrs)	Average Connection Time (min)
2011.11	616	5.3	5 10 0.0	241.04	23.5
2011.12	971	8.3	0 0.0	255.44	15.8
2012.1	1,053	9.0	0 0.0	211.65	12.1
2012.2	1,286	11.0	0 0.0	289.86	13.5
2012.3	1,602	13.7	0 0.0	436.51	16.3
2012.4	2,474	21.1	0 0.0	584.16	14.2
2012.5	3,078	26.2	0 0.0	771.40	15.0
2012.6	647	5.5	0 0.0	175.78	16.3



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GNSS Spider - [Local Network Server]

File View Management Processing Tools Window Help

Management Local Network Server

User-ID: zura Rover User Name: janashvili zura Connect: 13.05.12

Search Images Videos Maps News Shopping Gmail More

George Lobjanidze

Google 41.728392 41.734994(zura)

Map Photos

2000 ft 500 m

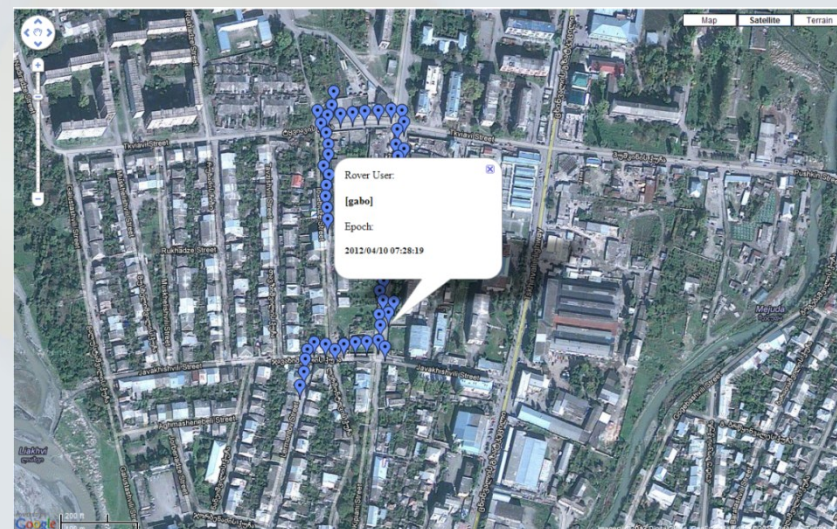
Net Config RT Products Map View Rover Status Sat Status

Content	Product	Date/Time	User	Category	Text
All		13.05.2012 19:00:30	Spider Server	Network Server	Ephemeris updated on RTK server. Satellite: R19, IODE: 9, Time: 05-13-2012 15:15:15.
All Clusters		13.05.2012 19:06:27	ClusterServer	Cluster	Cluster GeoCORS: Broadcast Ephemeris missing for SV G2 in network processing
All Products		13.05.2012 19:06:52	Spider Server	Network Server	Ephemeris updated on RTK server. Satellite: G02, IODE: 86, Time: 05-13-2012 16:00:00.
Query (Offline)		13.05.2012 19:06:52	ClusterServer	Cluster	Cluster GeoCORS: Broadcast Ephemeris available for SV G2 in network processing

Done

Real-Time Processing started Local User level: Administrator Local time: 19:07:14

Start GNSS Spider - ... GNSS Spider - ... Ipswitch What... C:\gaga \\10.100.100.... Leica SpiderQC New GNSS Spid... Administrator: ... 7:07 PM



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Geo-CORS

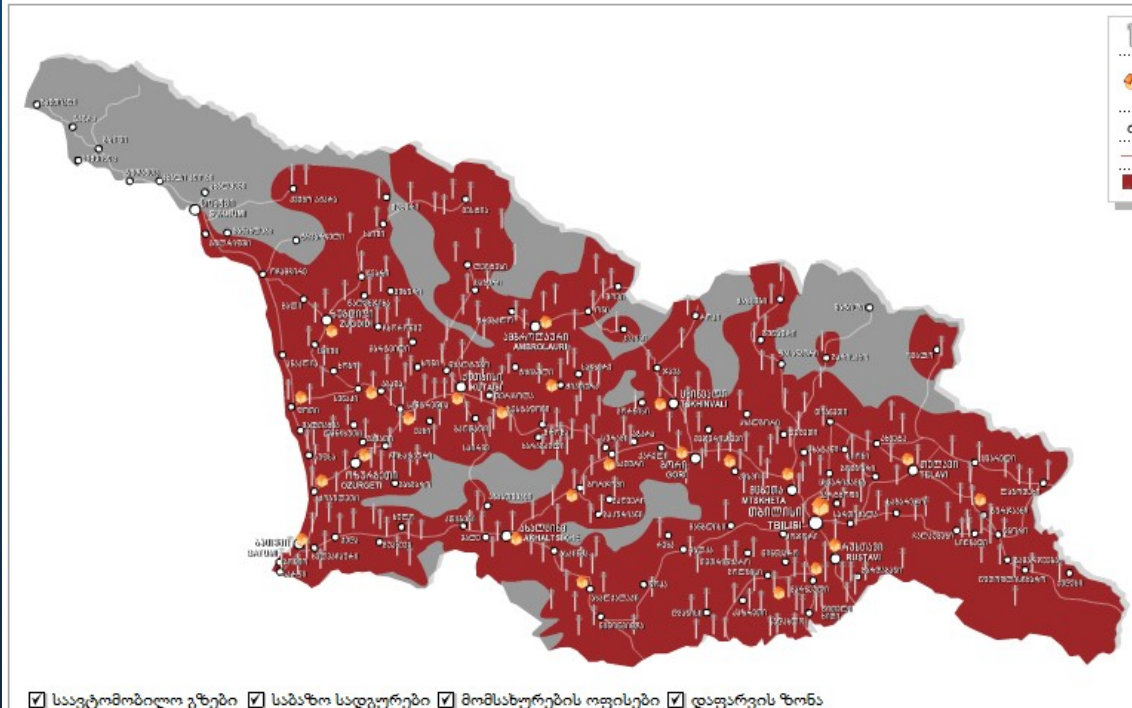
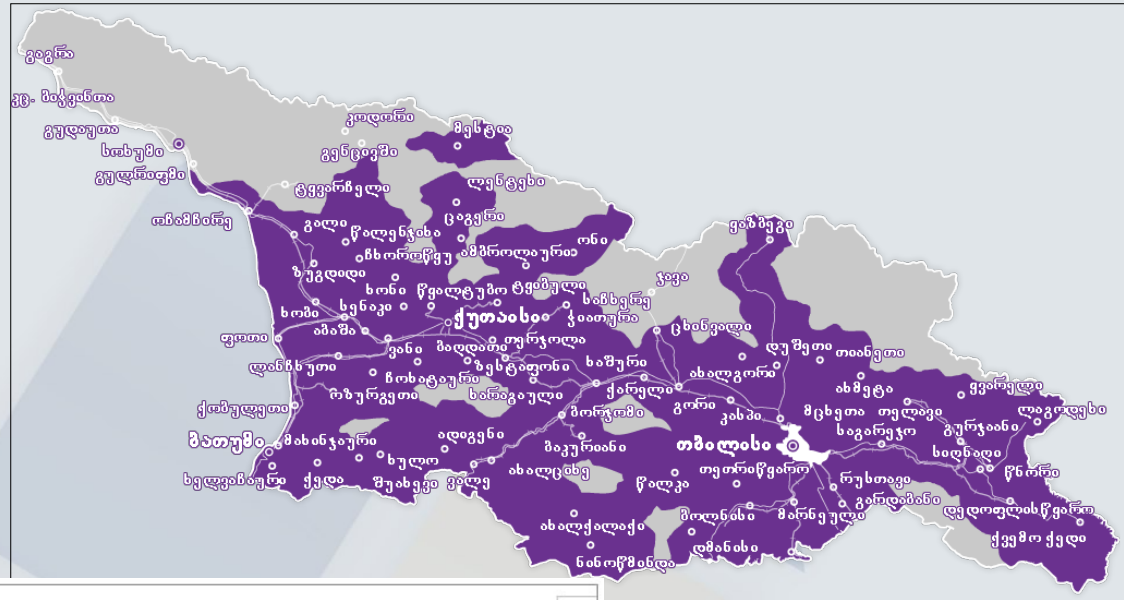
Summary : Ideal Support for Multiple Applications

- National Mapping Producers

- Cadastre
- GIS
 - Utility Companies
 - Telecoms
 - Transport Departments (fleet management...)
- Infrastructure & Road construction
- Natural Resource Management (Mining, Exploration)
- Scientific (atmospheric modelling, seismic monitoring,...)
- Meteorological Agency, Weather forecasts
- Environmental Agencies
- Agriculture
- Natural Hazards & Disaster Management



GSM coverage



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Station DataBase



Geo-CORS, SpiderWeb - Windows Internet Explorer

http://geocors.napr.gov.ge/spiderweb/fmIndex.aspx

File Edit View Favorites Tools Help

Google Search

PLAY IT Search

Go Facebook Facebook Games! YouTube TV HTML

Favorites Suggested Sites Web Slice Gallery ITRF Network Map Reference3D STONEX BRAND - Stonex

Geo-CORS, SpiderWeb

Sign In

Page Safety Tools

GEO-CORS

Viewer EN | GE

Site overview

SpiderWeb

Home

- Site overview
- Register
- Forgotten Password
- Spider Business Center
- Leica Geosystems
- SpiderWeb
- EUPOS
- NAPR

Login

User Name:*

Password:*

☐ Remember me

*Required field

Login

Session timeout/invalid. Please login.

EUPOS
European Position Determination System

Station DataBase

Map of EUPOS Reference Stations

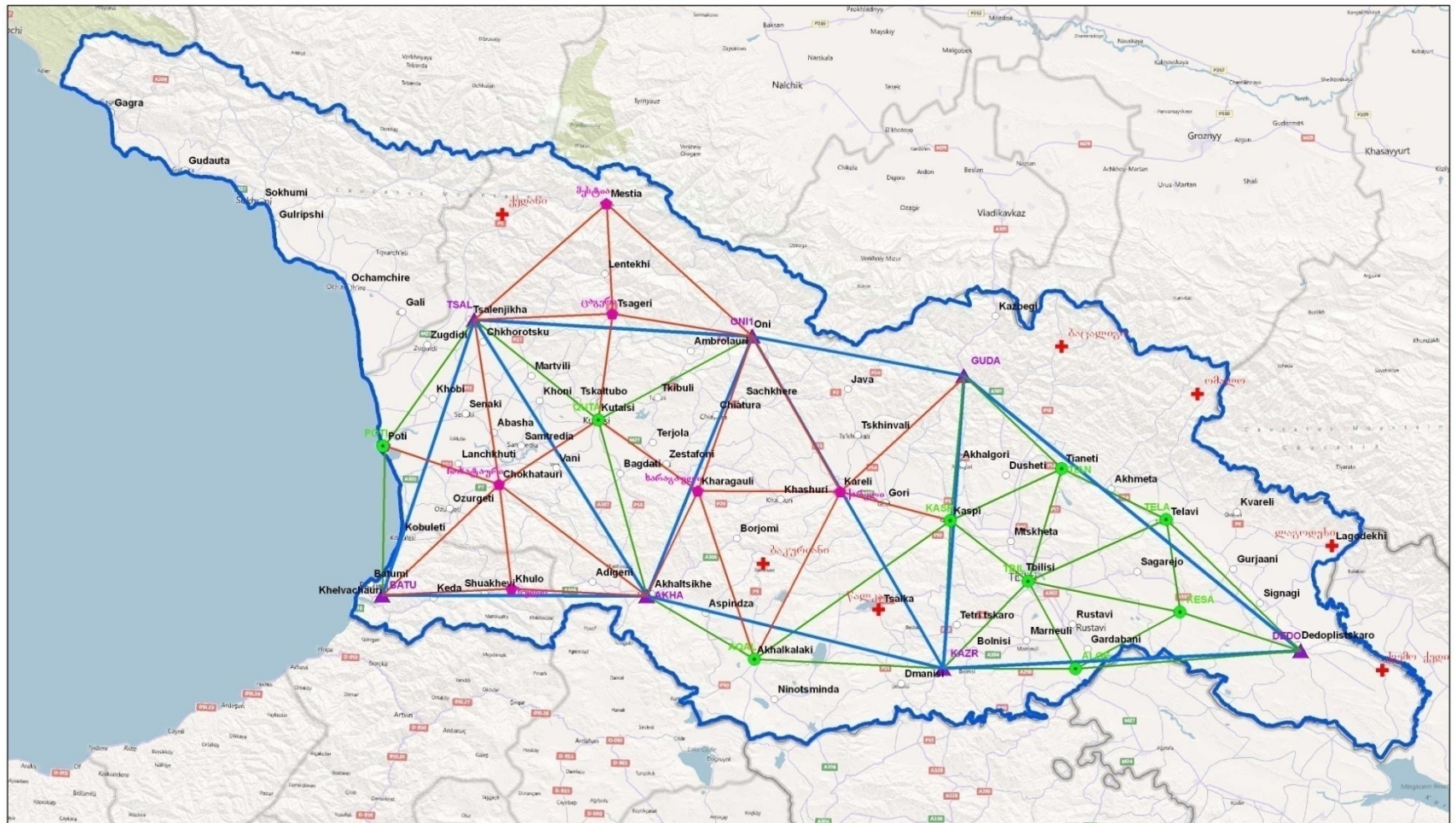
Map Satellite Terrain

Internet 95%



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Plane for 2012 year 22 stations



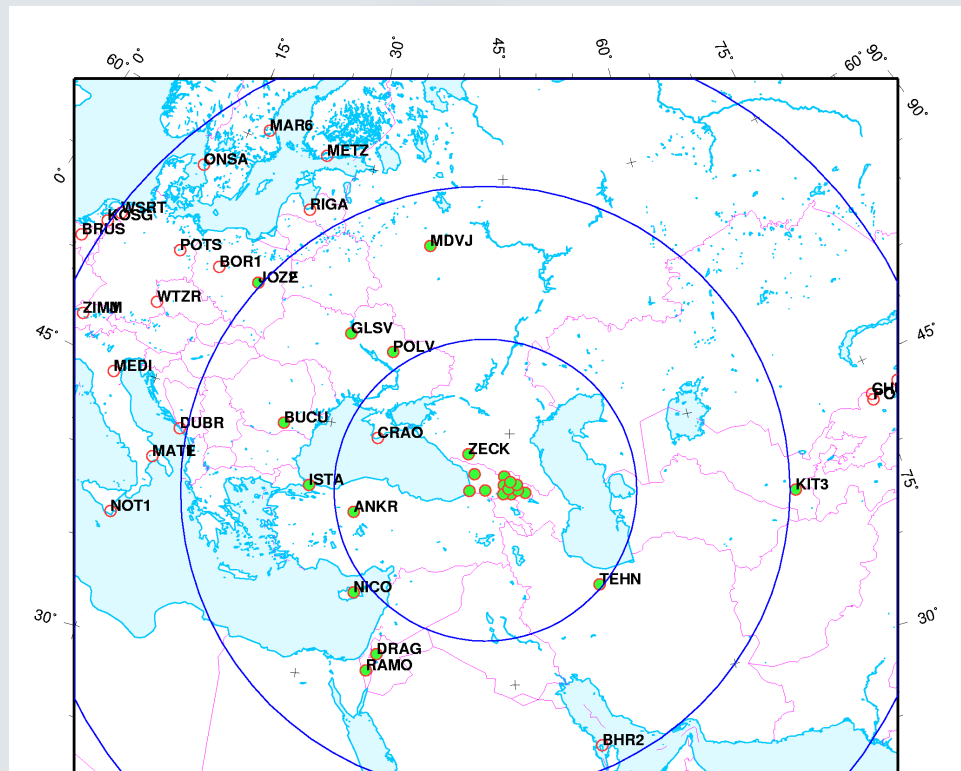
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- **Creation of new reference frame “CEONET”**
- **Establishment of new modern geoid model for Georgia**



Georgia Continuously Operating Reference Stations

Coordinates Computation Report by IGN author DPR/SGN/PMT/sb



Results

1. Georgia CORS IGS08 ep. 2011.353 Coordinates (use today)
2. Georgia CORS ETRF2000 ep. 2011.353 Coordinates

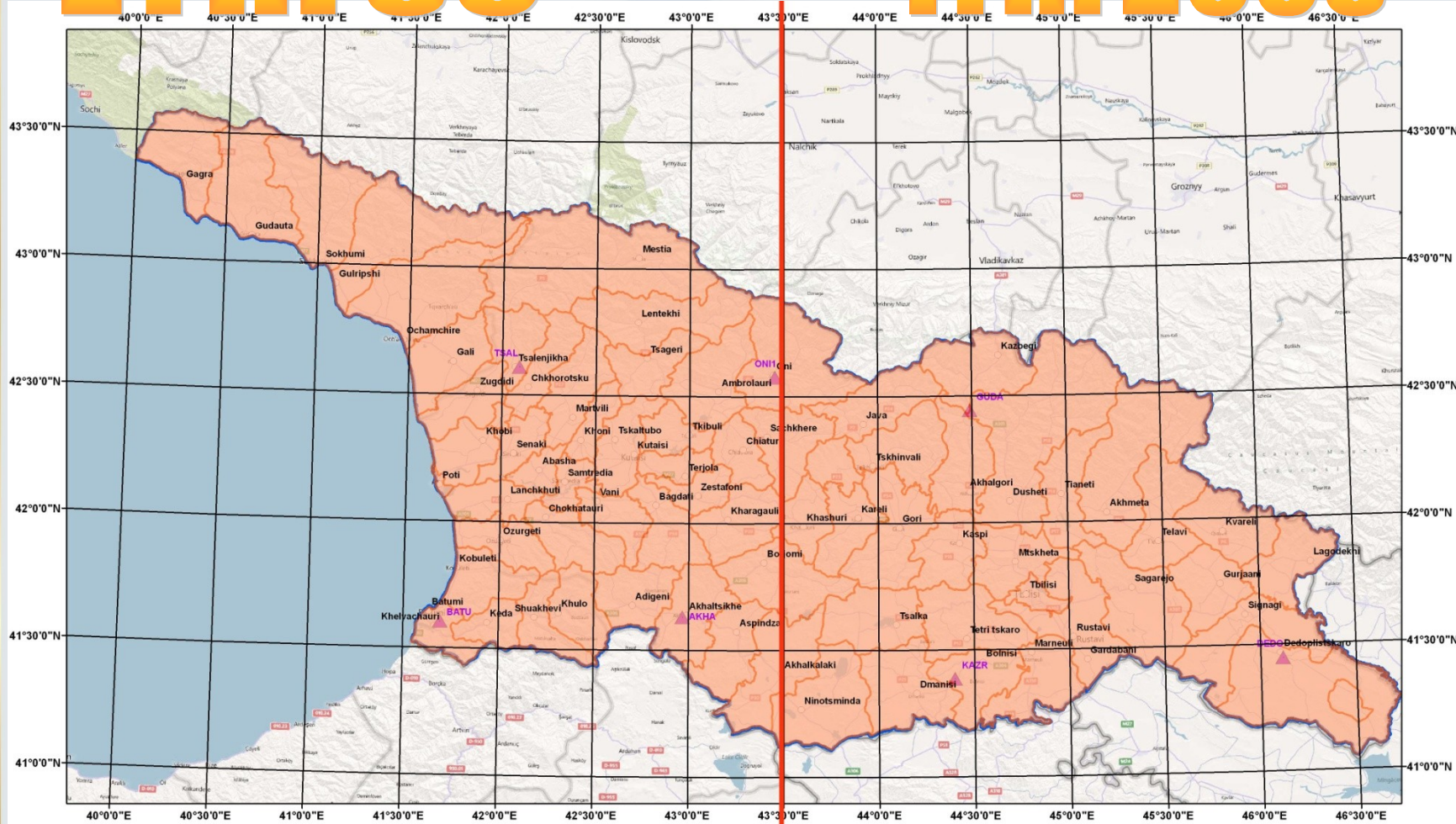


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GEONET12TM

ETRF89

ITRF2008

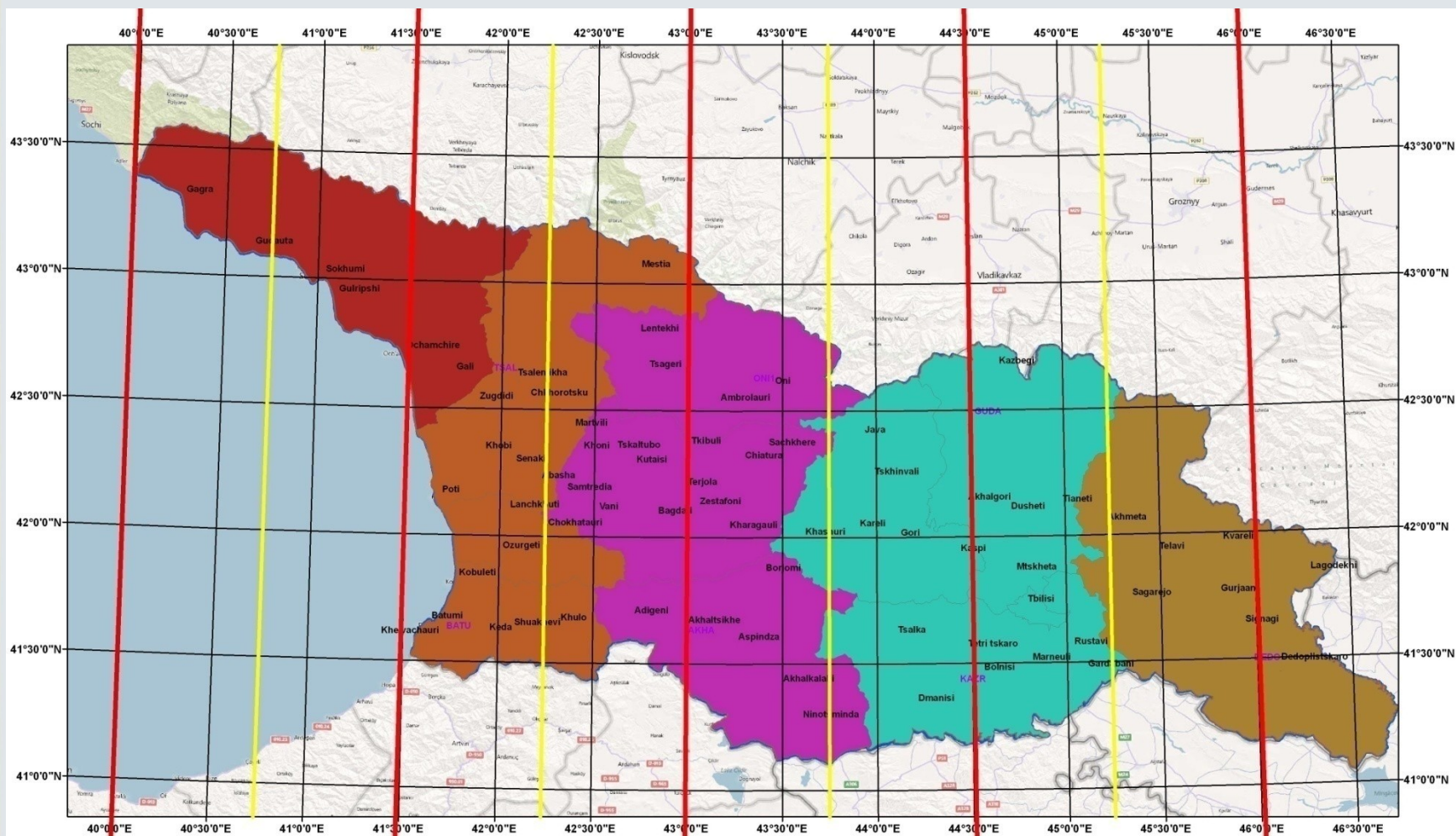


Central meridian 43,5 degrees

1:10 000.....1:1 000 000– scale factor 0,9996



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40

41,5

43

44,5

46

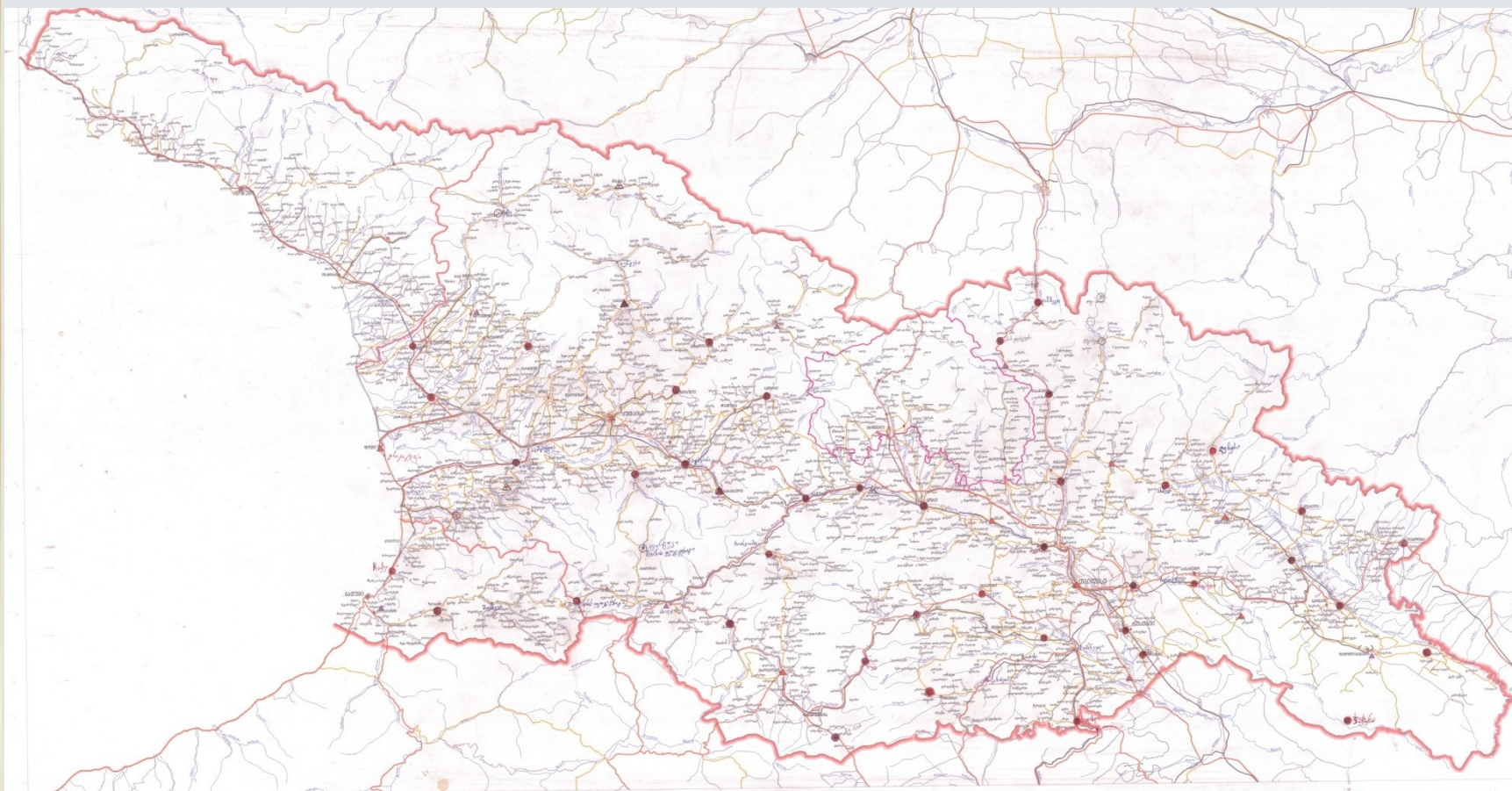
5 Zones for scales

1:500.....1:5000 scale factor 1



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50 height benchmarks points measured by GPS



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Rehabilitation and creation of new height benchmarks for the leveling model



I class

II class

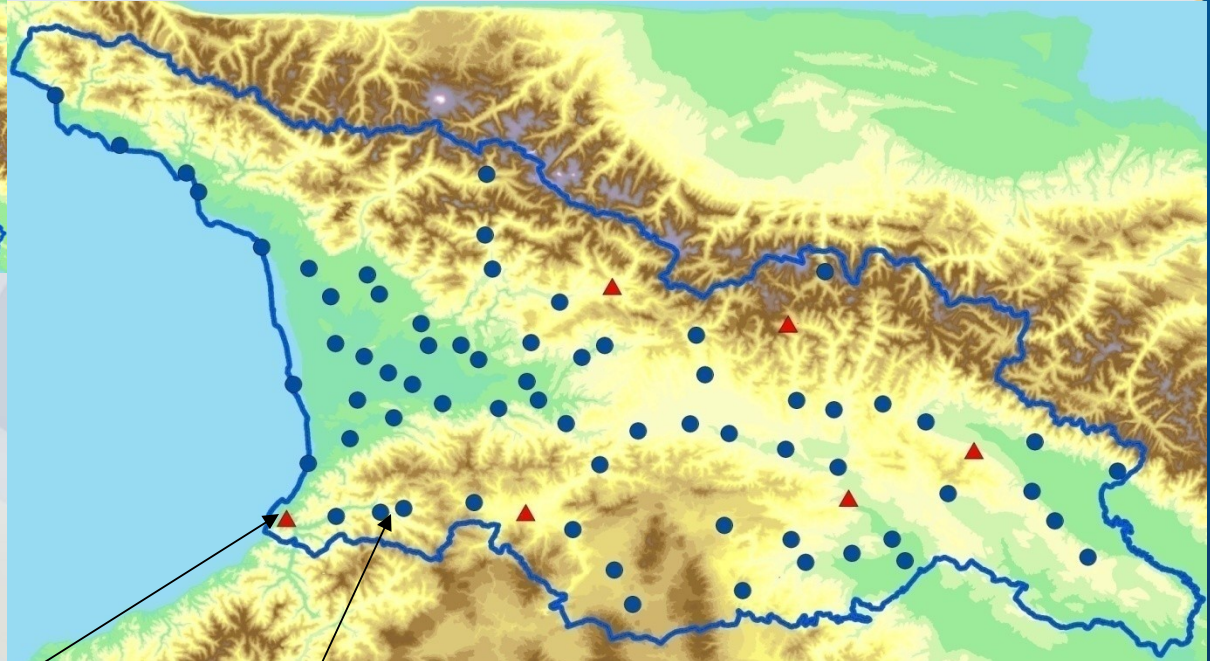
3963 height benchmarks.
65 are 1 class
674 are 2 class



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Gravimetric work

New gravimetric map



Old gravimetric map



Absolute Gravity for ties



Relative Gravity for
expanding local regions
where airborne shows
significant mismatch with
existing terrestrial

Thank You for your Attention !!!



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