



Template for CORS Networks

This template gives an idea on what can be included in the document or poster to describe the national or regional CORS network that your organisation is responsible for. The format is not so important, the content is. The idea is to publish the description on the FIG Commission 5 web page together with other description of others networks..

This is a co-operation between the FIG Working Groups 5.2 (Reference Frame in Practice) and FIG Working Group 5.4 (GNSS). For more information about the working groups, please visit <http://www.fig.net/commission5/index.htm>.

Your document should be sent to Mikael Lilje, wg-chair of FIG-WG-5.2 (Reference Frame in Practice). Email address is mikael.lilje@lm.se

Your help is most appreciated!

TITLE: LitPOS

General description

LitPOS is a new GNSS infrastructure for Lithuania. GNSS stations started to be operational in July 2007. LitPOS combines a network of base GNSS stations with dedicated communication channels and appropriate hardware and software.

Main developers are:

- National Land Service under the Ministry of Agriculture – financial support and supervising;
- Private company “GPS Systems Baltija” – software and hardware;
- State enterprise “Infostruktūra”, private company “FIMA” – infrastructure (dedicated Intranet lines, electric power supply);
- Geodetic Institute of Vilnius Gediminas Technical university – acting as overall coordinator and LitPOS operator.

Objectives of LitPOS:

- to foster the implementation of GNSS techniques in Lithuania;
 - to support a broad spectrum of GNSS based applications in positioning and navigation;
 - to economize precise geodetic and cadastral surveying and to bring better comfort to surveyors;
 - to provide the 24/7 real time positioning service with national-wide coverage;
- to harmonize the national geodetic infrastructure with the EU countries and to facilitate the implementation of ETRS and EVS.



Manager(s)/Organisation(s)

National Land Service under the Ministry of Agriculture is responsible for the LitPOS network. It is owner of the network, infrastructure and data distribution. The operational tasks are charged to State enterprise “GIS-centre”.

The data of the LitPOS is free of charge and could be obtained after simple registration of a user.

Type of equipment, description of a “typical” station

Instrumentation of **15** stations (Fig. 1):

- **Trimble NetRS receivers with Chock ring antennas,**
- TRIMMARK 3 RADIO MODEMS,
- PTU200 Combined pressure, humidity and temperature transmitters,
- DSL modem,
- AC adapter 12V,
- e-Power Switch,
- UPS,
- electric power gauge.

Instrumentation of **10** stations (Fig. 2):

- **Trimble 5700 receiver with Zephyr geodetic antennas,**
- Com server,
- DSL modem,
- AC adapter 12V,
- e-Power Switch,
- UPS,
- electric power gauge.

Typical view of GPS antenna mounted on the roof of fire station is presented in Fig. 3.



Fig. 1. LitPOS station with Trimble NetRS receiver



Fig. 2. LitPOS station with Trimble 5700 receiver



Fig. 3. GPS antenna on the roof of fire station tower



Description of Control Centre

LitPOS hardware of operating centre consists of 3 PC and 2 servers (Fig. 4).

LitPOS software modules are: GPStream, GPSNet , NTRIP Caster.

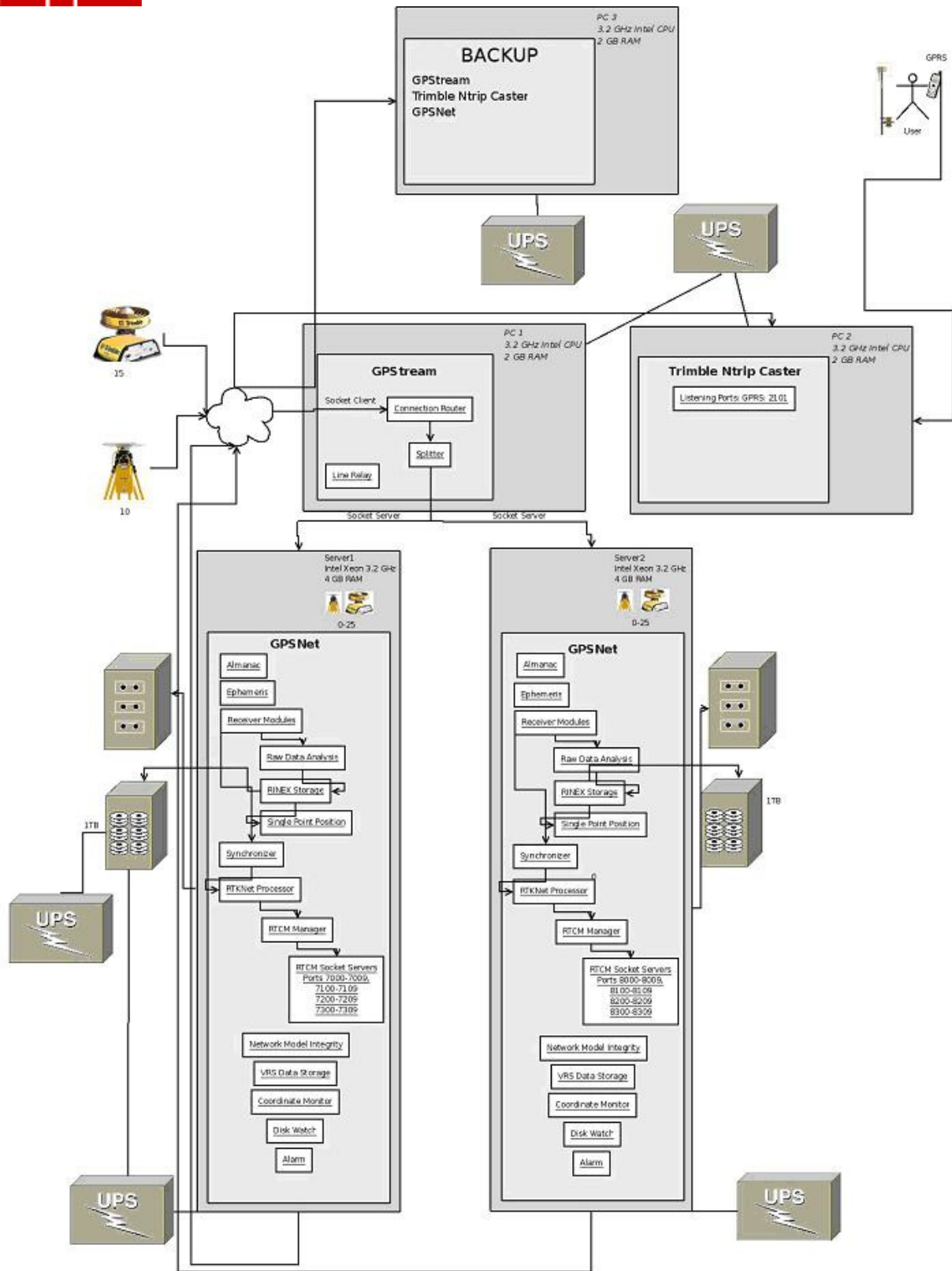


Fig. 4. Principal scheme of hardware and data flows



Stations

LitPOS – a Multipurpose Positioning System for the Lithuania. It is an active network of permanent GNSS stations (Fig. 5). Total number of stations is 25. Average distance between stations is 50 km.



Fig. 5. Distribution of LitPOS stations

The 3 stations of ASG-PL (Poland) and 2 stations of LatPOS 9Latvia) are included into network solution (Fig. 6).

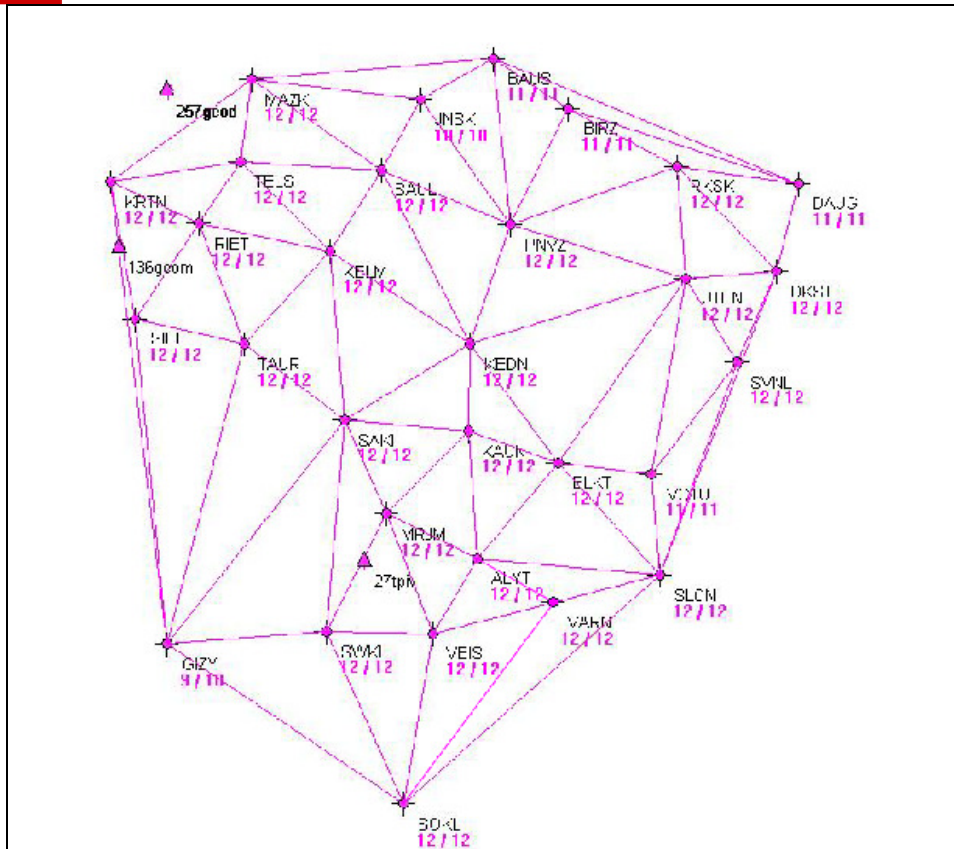


Fig. 6. LitPOS network RTK solution

Services

Correction data acquisition by GPRS. The GPS satellites are tracked only.

LitPOS Services

Service	Accuracy, cm
DGPSNet	50
RTKNet	2
GPPS	1

Users

Users (totally 450 in July 2009) are both private and governmental organisations (percentage is not available). Some statistics are presented in Fig. 6, 7.

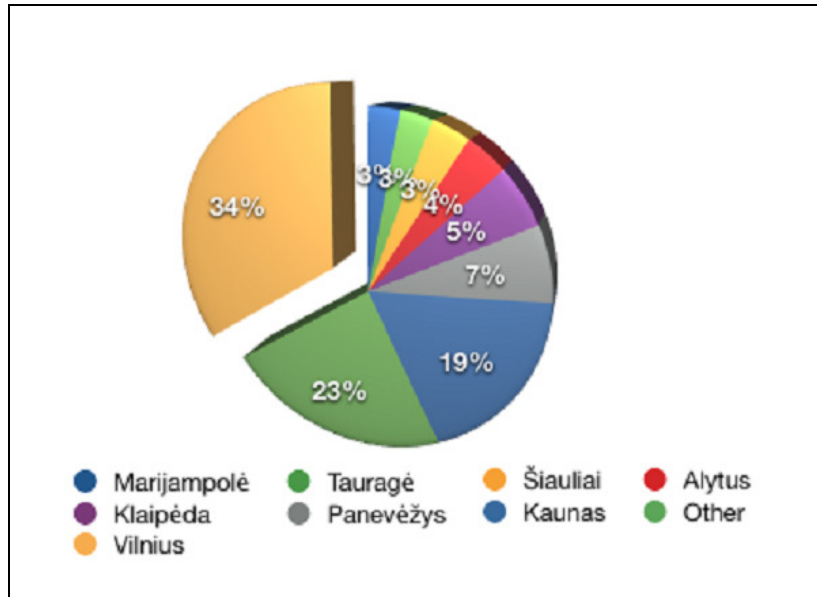


Fig. 7. Users distribution by the cities

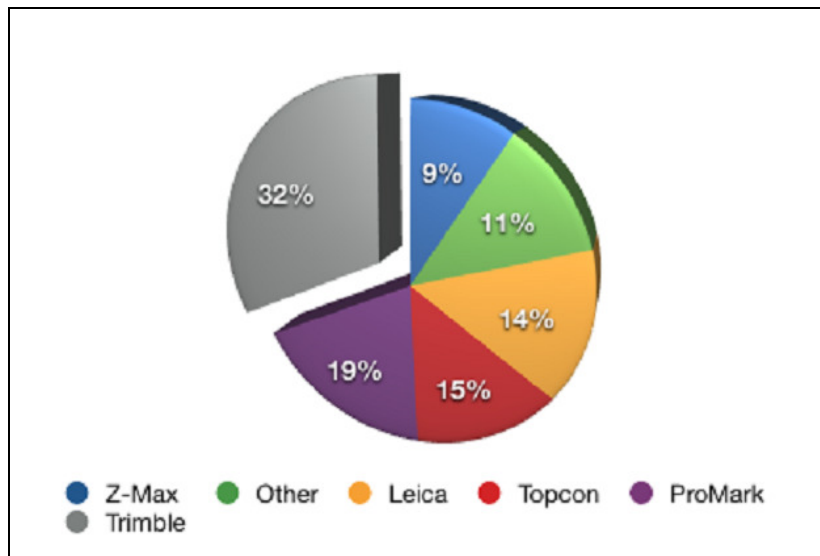


Fig. 8. Receiver's popularity

The network is primary used for the positioning applications.

Issues to Resolve

Future plans

To add 4-5 stations in the territory of Lithuania and link the network with nearest GPS stations from neighbouring countries.

To update hardware (GPS receivers particularly) by modern once.

Contact information

www.litpos.lt

Edmandas Sleiteris: esleiteris@zum.lt