



# LAND SURVEY OFFICE

**CZEPOS**

***EUPOS 2018***

**Land Survey Office, Department of Geodetic Control**

**Jan Řezníček, Prague 2018**

# Administration of CZEPOS network

C Z E P S

compatibility of CZEPOS services with  
global navigation satellite systems

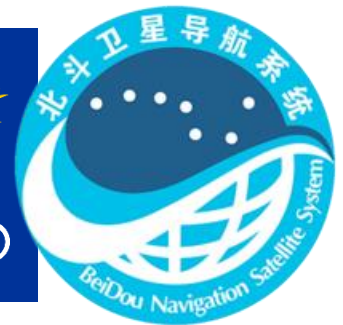
2004  
GPS NAVSTAR



2012  
GLONASS



2017/18  
GALILEO  
BeiDou



# Upgrade of Receivers 2018/19

## Leica GRX 1200+ GNSS



- case since 2004
- new motherboard since 2012
- Leica support finished 2017



GPS+GLO+GAL+BEI compatible,

- not all current frequencies (f.e. GLONASS L2C or Galileo E6 is missing)
- not compatible with Trimble software used in APOS/ASG-EUPOS/SKPOS

## Leica GR30

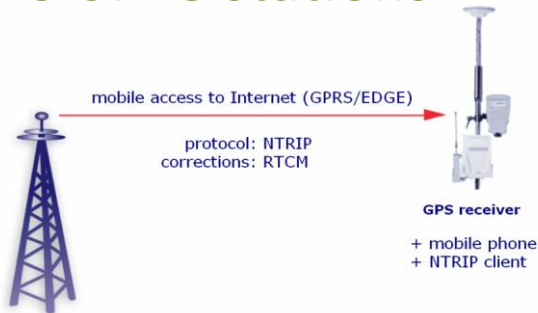
- 2018/2019  
so far 3 EPN stations



# Administration of CZEPOS network

- 28 Czech stations
- 27 neighboring stations
- real-time services
- post-processing products
- GPS/GLONASS

**2018 Galileo  
+ BeiDou  
25 of 28 stations**

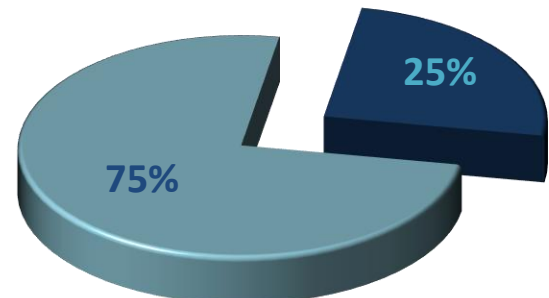


- 7 stations involved in EUREF permanent network (EPN)
- cooperation within EUPOS project



**2018/11: 1610 users**

- private sector
- public sector



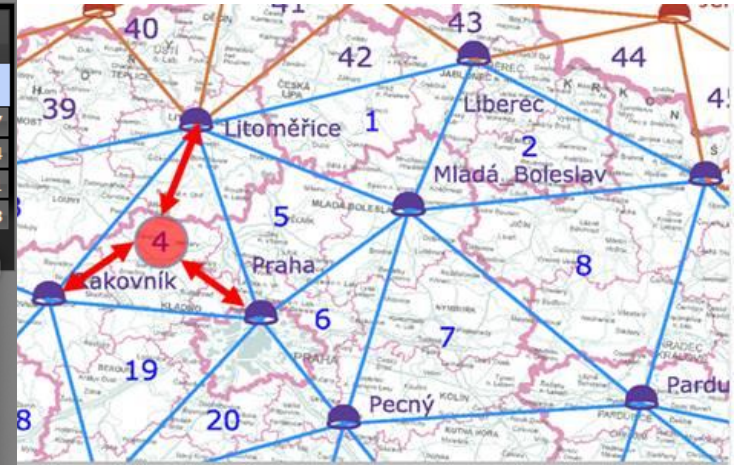
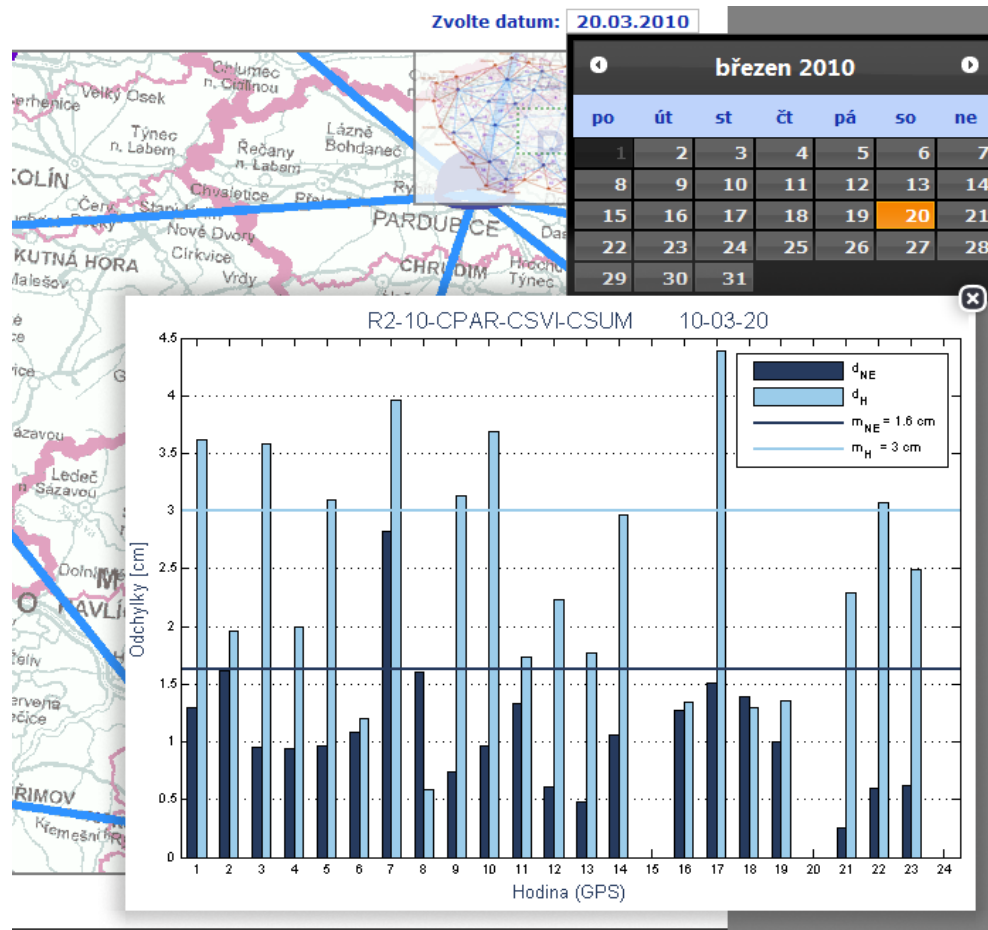


## Compatibility of receivers with GNSS



# Administration of CZEPOS network

## • monitoring of accuracy



- Internet application, created in cooperation with CTU
- 75 testing areas on the territory of CR including border areas
- there are 3 testing baselines in each area
- each baseline is tested from RTK x VRS service

- **since 2010**
- **upgrade 2018/19 (Galileo/BeiDou)**

# Administration of CZEPOS network

- monitoring of operation

**ZEMĚMĚŘICKÝ ÚŘAD - CZEPOS - Mozilla Firefox**

Soubor Úpravy Zobrazení Historie Záložky Oblíbené Nástroje Nápověda

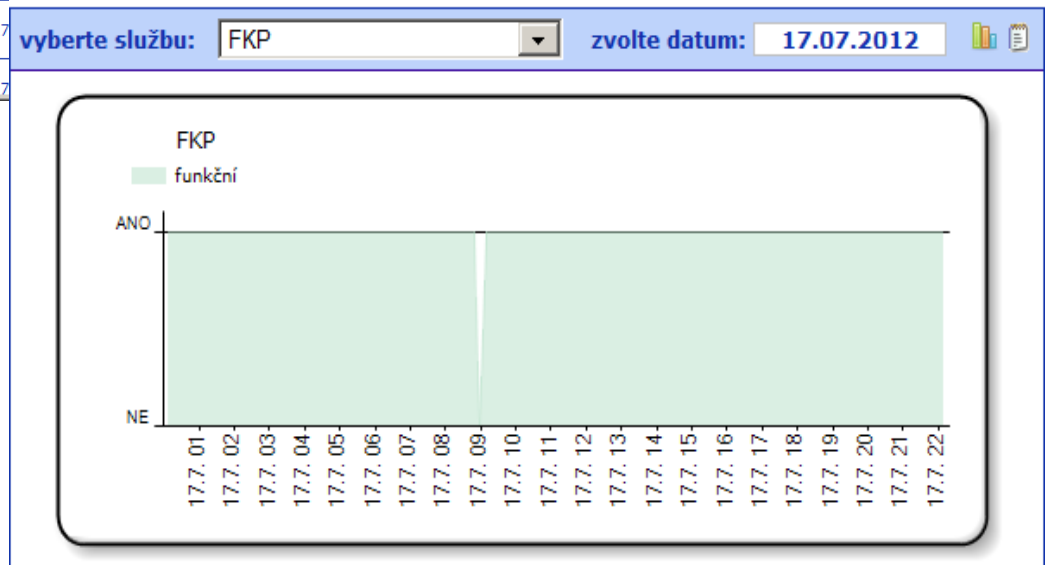
ZEMĚMĚŘICKÝ ÚŘAD - ...

czepos.cuzk.cz/\_serviceStatus.aspx

**aktuální stav služeb RTK a DGPS**  
služby RTK a DGPS, závislé na výběru stanice

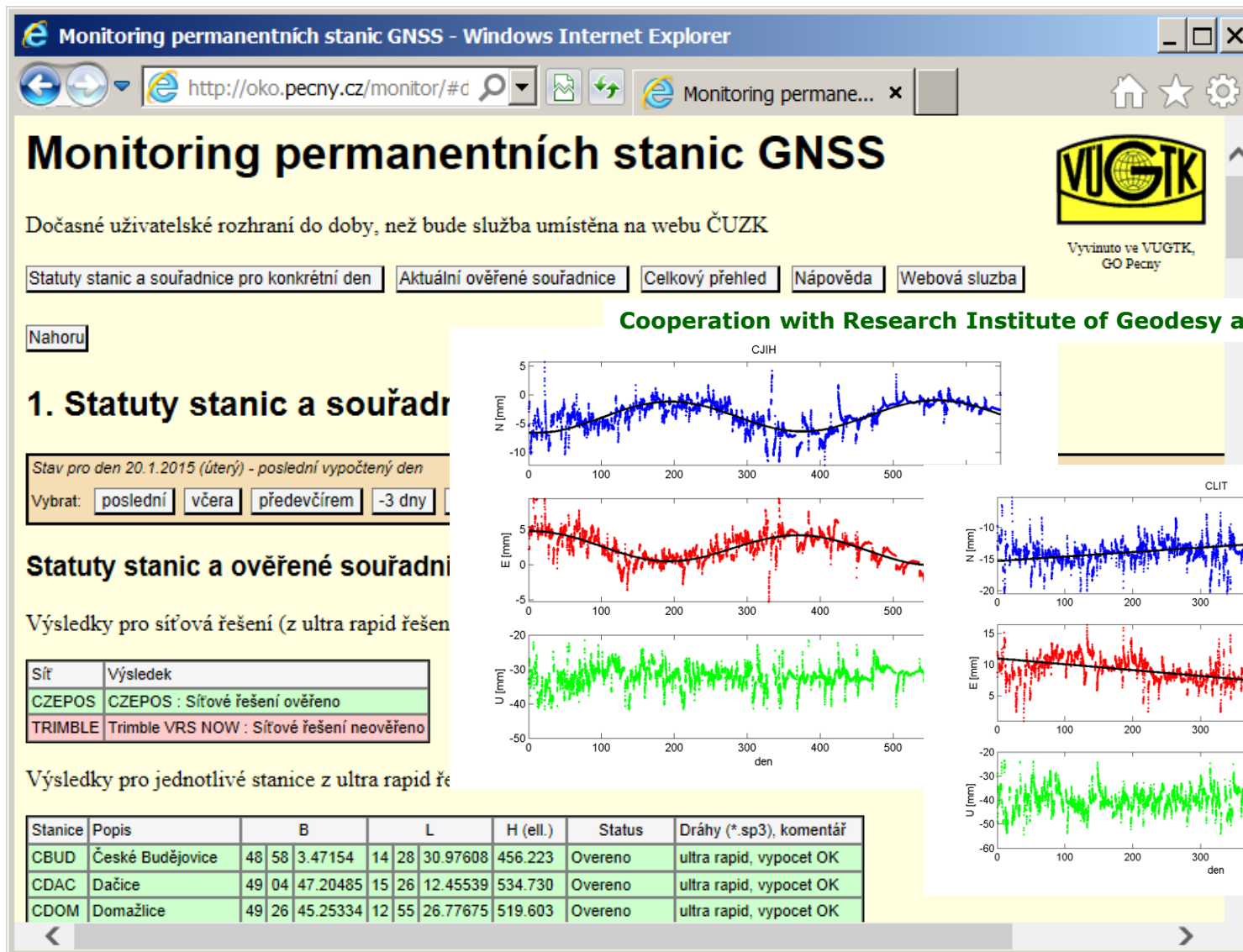
n	stanice	kód	RTK funkční	DGPS funkční	testováno
1	Pardubice	CPAR	ANO	ANO	7/17/2012 9:31:36 PM
2	Svitavy	CSVI	ANO	ANO	7/17/2012 9:33:04 PM
3	Jihlava	CJIH	NE	NE	7/17/2012 9:34:32 PM
4	Dačice	CDAC	ANO	ANO	7/17
5	Tábor	CTAB	ANO	ANO	7/17
6	Příbram	CPRI	ANO	ANO	7/17

výpis historie - služby virtuální referenční stanice a nejbližší stanice



# Administration of CZEPOS network

- monitoring of operation





# New prices since 2017

<b>DGPS</b> Differential GPS	<ul style="list-style-type: none"> <li>• DGPS</li> </ul>	20 Kč (0.78 €) / 1 hour
RTK Real Time Kinematic	<ul style="list-style-type: none"> <li>• RTK</li> <li>• RTK3-GG</li> <li>• RTK3-NS-GG</li> </ul>	<del>80 Kč (3.13 €) / 1 hour</del> <b>60 Kč (2.35 €) / 1 hour</b>
VRS Virtual Reference Station	<ul style="list-style-type: none"> <li>• RTK-PRS</li> <li>• RTK-FKP</li> <li>• VRS3-MAX, VRS3-iMAX</li> <li>• VRS3-MAX-GG, VRS3-iMAX-GG</li> <li>• VRS-MAX-GG_L4G</li> <li>• VRS-iMAX-GG_CMR, VRS-iMAX-GG_CMR+</li> <li>• VRS3-VirtualRS-GG</li> </ul>	<del>80 Kč (3.13 €) / 1 hour</del> <b>60 Kč (2.35 €) / 1 hour</b>

# New prices since 2017

## Real-time services:

### - fixed monthly payment

RTK-PRS, RTK-FKP, MAX, iMAX, MAX-GG, iMAX-GG,  
RTK, RTK3-NS, RTK3-GG,  
DGPS

~~6 000 Kč (234.74 €)~~

**1 000 Kč (39.12 €)**

### - fixed annual payment

RTK-PRS, RTK-FKP, MAX, iMAX, MAX-GG, iMAX-GG,  
RTK, RTK3-NS, RTK3-GG,  
DGPS

~~25 000 Kč (978.09 €)~~

**10 000 Kč (391.24 €)**

## Post-processing products:

data interval: 1 – 4 seconds

~~80 Kč (3.13 €)~~ **50 Kč (1.96 €)**

5 – 9 seconds

~~16 Kč (0.63 €)~~ **10 Kč (0.39 €)**

10 – ... seconds

~~8 Kč (0.31 €)~~ **5 Kč (0.20 €)**

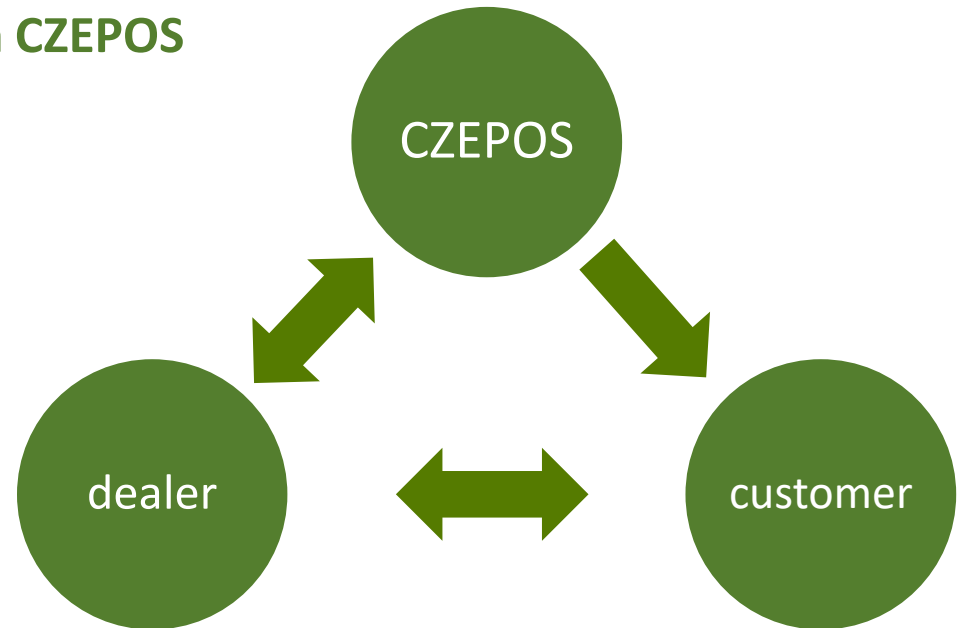
computation service

**free of charge**

# CZEPOS – cooperation with dealers since 2018

- dealer register customers within CZEPOS

customers are still registered within CZEPOS



- dealer operates own GNSS software (virtual GNSS network)



dealer provides GNSS services to customers by his own GNSS software

only for customers from the Czech Republic

...

**GLOBAL NETWORKS**



**thank you for your attention**