Land Survey Office, Department of Geodetic Control

Jan Řezníček
Administration of CZEPOS network

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

since 2017
Galileo + BeiDou

• 7 stations involved in EUREF - EPN
• cooperation within projects: EUPOS, EPOS, GISCAD-OV

2022/11: 2340 users
+210 since last year
Administration of CZEPOS network

compatibility of CZEPOS services with global navigation satellite systems

2004 GPS NAVSTAR

2012 GLONASS

2017/18/19 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 first 8 stations
• 2019 remaining 17 stations
Galileo/BeiDou RINEX3 services since 2021

till 2021: Leica SpiderWeb software: only RINEX2 (GPS+GLO)
since 2021: Leica X-Pos software: only RINEX3 (GPS+GLO+GAL+BDS)
Administration of CZEPOS network

- monitoring of operation
Administration of CZEPOS network

- monitoring of quality

part of Leica X-Pos software
Administration of CZEPOS network

• monitoring of quality

Monitoring permanentních stanic GNSS

Dočasné uživatelské rozhraní do doby, než bude služba umístěna na webo ČUZK

Cooperation with Research Institute of Geodesy and Cartography
Administration of CZEPOS network

Service quality monitoring

- since 2019 EUPOS SQM – 4 stations
Administration of CZEPOS network

- 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

• monitoring of accuracy

• since 2010
• upgrade Galileo/BeiDou ... in preparation
## New prices since 2017

<table>
<thead>
<tr>
<th>DGPS</th>
<th>Differential GPS</th>
<th>• DGPS</th>
<th>20 Kč (0.78 €) / 1 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTK</td>
<td>Real Time Kinematic</td>
<td>• RTK</td>
<td>80 Kč (3.13 €) / 1 hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RTK3-GG</td>
<td>60 Kč (2.35 €) / 1 hour</td>
</tr>
<tr>
<td>VRS</td>
<td>Virtual Reference Station</td>
<td>• RTK-PRS</td>
<td>80 Kč (3.13 €) / 1 hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RTK-FKP</td>
<td>60 Kč (2.35 €) / 1 hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VRS3-MAX, VRS3-iMAX</td>
<td>80 Kč (3.13 €) / 1 hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VRS3-MAX-GG, VRS3-iMAX-GG</td>
<td>60 Kč (2.35 €) / 1 hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VRS-MAX-GG_L4G</td>
<td>80 Kč (3.13 €) / 1 hour</td>
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<tr>
<td></td>
<td></td>
<td>• VRS-iMAX-GG_CM, VRS-iMAX-GG_CM+</td>
<td>60 Kč (2.35 €) / 1 hour</td>
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<tr>
<td></td>
<td></td>
<td>• VRS3-VirtualRS-GG</td>
<td>60 Kč (2.35 €) / 1 hour</td>
</tr>
</tbody>
</table>
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 €)**
- 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
  **50 Kč (1.96 €)**
  5 – 9 seconds
  **16 Kč (0.63 €)**
  10 – ... seconds
  **8 Kč (0.31 €)**
  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
CZEPOS – cooperation with dealers since 2021
thank you for your attention