NATIONAL REPORT OF POLAND TO EUREF 2007

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Main geodetic activities at the national level in Poland since 2005

- modelling a **cm geoid model** in Poland,
- maintenance of the national **gravity control**,
- investigations of **vertical crustal movement**,
- operational work of **permanent IGS/EUREF stations**,
- data processing at **Local Analysis Centre at WUT**,
- activity within **EUREF-IP project**,
- **GNSS antenna calibration**,
- monitoring of **ionosphere** and ionospheric storms,
- the **ASG-EUPOS** network in Poland,
- **local GNSS** networks,
- activity in **SLR**.
Modelling a cm geoid for Poland

fit of astro-gravimetric geoid, gravimetric quasigeoid, best-fitted quasigeoid, integrated quasigeoid to the GUGiK 2001 quasigeoid

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
Maintenance of national gravity control

absolute gravity measurements at Jozefoslaw

modernised gravity calibration baseline in Poland (2006 – project)

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
Operational work of permanent IGS/EUREF stations

EPN stations in Poland (2006):
- Borowa Gora (BOGI)
- Borowa Gora (BOGO)
- Borowiec (BOR1)
- Cracow (KRAW)
- Jozefoslaw (JOZE)
- Jozefoslaw (JOZ2)
- Katowice (KATO)
- Lamkowko (LAMA)
- Wroclaw (WROC)
- Zywiec (ZYWI)

Stations participating in EUREF-IP project:
- Borowa Gora (BOGI)
- Cracow (KRAW)
- Jozefoslaw (JOZ2)
- Wroclaw (WROC)

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
Data processing at LAC at WUT

Data from 58 EPN stations
- routinely processed

Fully automatic system for ZTD estimation in Near Real Time
- operates since fall 2006

Test NRT campaign stations

OGPSP system of online GPS data processing for individual users is accessible by http://ogbsp.gik.pw.edu.pl since November 2005

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
GNSS antenna calibration

The prototype of antenna calibration device tested in Borowa Gora
(Institute of Geodesy and Cartography, Warsaw; Institute “Metrologia”, Kharkiv)

Mean offset determination

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
Monitoring ionosphere and ionospheric storms

Total number of observations of double-differences

Total number of all ambiguities (blue circles), and unresolved ambiguities (red circles) for CAS1-MCM4 vector in March-April 2001

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
ASG-EUPOS network in Poland

Polish Active Control Network for Upper Silesia and Malopolska region operating in 2007

Reference stations (87) of the Polish part of the EUPOS network

Symposium of the IAG Subcommission for Europe
European Reference Frame – EUREF 2007
London, UK, 6-9 June 2007
Local GNSS networks

Network of 3 reference stations and theoretical range of the DGPS/RTK services in North-East Poland
Satellite Laser Ranging

Borowiec station operates within ILRS and EURULAS

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<th>in 2006:</th>
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<tr>
<td>• ~900 successful passes of 24 SLR satellites with the normal point precision of 4 mm and accuracy of 15 mm</td>
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<td>• new transmitting telescope &amp; system for change of the laser beam divergence</td>
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<td>• GLONASS, Etalon, GPS &amp; GIOVE-A (Galileo) satellites laser ranging</td>
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<td>• determination of satellite spin parameters of LAGEOS-1, Gravity Probe-B, Ajisai and Etalon</td>
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<td>• determination of the positions and velocities of all SLR stations for 1999-2004</td>
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<td>• determination of SLR station positions from Starlette and STELLA satellites</td>
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<td>• orbits calculation of the low satellites: Starlette, STELLA, CHAMP and Ajisai</td>
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