

# Activities at NKG EPN LAC

NKG = Nordiska Kommissionen för Geodesi =

Nordic Geodetic Commission

- Regional Analysis centre contributing to the continues daily processing of EPN
- Near real-time processing based on hourly data from EPN and other stations
- Other activities related to EPN and EUREF



# Daily EPN processing, NKG AC sub-network

Today 38 stations in Northern Europe

From Gweek 1235 40 stations





# Changes since may 2001

new parameters according to EPN directive GPSweek 1130 in final solution (old standard solution with 15 deg continue processing moved from Onsala to LMV GPSweek 1147 GPSweek 1167 new parameters in all steps except 15 deg GPSweek 1205 pole parameters extrapolated for the last 12 hours of the week (GPSweek 1225 a preliminary solution based on rapid orbits is processed before the final one to ensure final one to be in time)



### Change from Onsala to Lantmäteriet

#### GPSweek1147 (dec 2001/jan 2002), LINUX => WIN98

Quality Measures														
GPS Week	1141 1142 1143													
AC	OSO	LMV	OSO	LMV	OSO	LMV								
Resolved amb %	68	69	82	83	69	71								
rms final sol	1,3	1,2	1,3	1,2	1,3	1,2								

Coordinate co	omparis	on rms	
GPS Week	1141	1142	1143
N (mm)	1	1	1
E (mm)	1	1	1
U (mm)	2	3	2





•No serious problems

- •Data access at BKG
- •Some files compressed or transferred in a wrong way causing extra LF, e.g. SVTL
- some files for QAQ1 and THU3 missing at BKG although available in "station inconsistencies" report
- •stations with lower quality: KELY, SVTL
- •snow



#### KELY daily sol elw



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### KELY daily sol 15 deg

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### SVTL daily sol 15 deg





### VAAS daily sol elw





# VAAS daily sol 15 deg





#### KIR0 daily sol elw





## KIR0 daily sol 15 deg





#### DRES daily sol elw

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# **Near Real-time processing**

Solutions based on hourly data contributing to the COST 716 and TOUGH projects, estimation of atmospheric propagation path delay. Delivery within 1 h 45 m.

•NKG (NMA Oddgeir) :

Norwegian stations (13) + 10 EPN-stations

#### •NKGS (OSO Jan J):

Stations in Sweden (57), Denmark (3+26) + 25 IGS (10-15 EPN)

•Results available at http://www.oso.chalmers.se/geo/cost716.html



#### Near Real-time processing -NKG



#### NKG (NMA Oddgeir) :

- Norwegian stations (13) + 10 EPN-stations
  previous strategy with global orbit solution too slow (2 h 55 min)
- •new strategy 2 April 2003
- using JPL very rapid orbits, solving for clocks and ZTD,12 hour window, 15 min
- •GIPSY/Oasis II
- delivery after 1 h 20 min in average
- plan to add 10-15 stations in Norway
- plan to investigate need for orbit improvement



#### Near Real-time processing -NKGS

#### NKGS (OSO Jan J):

Stations in Sweden (57), Denmark (3+26) + 25 IGS (10-15 EPN) aug 2002-jan 2003, 22 sept 2003 -

**1. Global solution (25 IGS) with orbit improvement, JPL very rapid or broadcast as apriori, 24 h window** 

2. GIPSY PPP-solution solving for ZTD and station clocks 15 min, gradients 1 h, 24 h window



# Other activities related to EPN and EUREF

- Recomputation of nordic permanent stations (Swe, Nor, Fin)
- Station calibration at SWEPOS-stations, autumn 2003 ONSA, SPT0, VIL0 and HASS
- Common Nordic campaign
- NGGOS



# **Common Nordic Campaign**

Will result in a common Nordic reference frame in ITRF 2000

- to verify differences between national ETRS 89 realisations
- to tie national defining stations to permanent stations (Denmark)
- to enable computation of e.g. Danish ETRS 89 coordinates in Sweden and

Norway

• the new reference frame will **not** replace existing ETRS 89 realisations!!

#### Observations (KMS):

GPS week 1238, all permanent stations in the Nordic Countries + defining ETRS 89 stations in at least Denmark + ev stations in the <sub>20</sub> Baltic



#### Common Nordic Campaign, cont

Data Analysis (LMV)

5 centres, LMV, NMA, FGI, KMS, OSO Bernese, Gipsy, Gamit

Coordinate analysis and trasformation (NMA)

common ITRF 2000 (GW1238) -> national ETRS 89





#### Nordic Geodetic and Geodynamic Observing System

- The basis of the NGGOS is the Nordic permanent GPS network with a number of other sites
- NGGOS is a regional implementation and Nordic contribution to the ECGN
- There are more NGGOS sites than those Nordic points proposed for the ECGN









old absolute stations, permanent GPS, other candidates