## Status Report of the Special Project "Troposphere Parameter Estimation"



UPA

Wolfgang Söhne

Federal Agency for Cartography and Geodesy, Richard-Strauss-Allee 11, 60598 Frankfurt/Main, Germany, +49-69-6333-263, wolfgang.soehne@bkg.bund.de

In June 2001 (GPS week 1108) the first EPN Local Analysis Centres (LACs) started delivering the estimated Zenith Total Delay (ZTD) parameters to the BKG data centre, in daily SINEX files. Since GPS week 1185 (September 2002) all 16 LACs are contributing. A number of changes has been introduced since then (see table on the right), also influencing the ZTD parameters. The two figures on the right show the weekly biases for the 16 LACs as a mean over all stations and the corresponding standard deviation. Especially in the latter figure improvements can be identified, notably after GPS week 1320 and in particular following GPS week 1400. result of EPN trop er comb tion. Table on the right sh re pa vs the BEK COE DEO GOP IGE SUT UPA WUT BKG IGN LPT NKG OLG ROB SGO ASI huntin BFK BKG COE This matrix of figures on the right DEO shows the time series of the daily mean biases between each pair of MUR MAN the LACs reflecting the overall agreement between the various LACs' solutions and the impact of GOP the changes given in the table above. Consider that IGE The black curves are the daily mean biases between each pair of LACs, whereas The red curves are the corresponding rms values. IGN Since there are remarkable differences concerning the common EPN stations between each pair of LACs, lines give the number of common The stations between the LACs. I PT Note that Only two of the 16 LACs (ASI with MicroCosm and DEO with Gipsy) are using NKG singular software packages, whereas 14 of 16 LACs are using Bernese GNSS Software. The station distribution to the individual LACs is non-homogeneous in sense of shared sites: OLG Few LACs have no common sites, e.g. BEK and NKG, DEO and OLG, whereas Some LAC pairs have only very few common stations (down to one) which may yield to higher scattering, e.g. DEO and NKG, ROB while Some LACs have more than 20 stations in common, e.g. ASI and BEK, BKG and ROB. SGO Observe that In general, the biases became smaller starting with GPS week 1400. The different times of the software change from BSW v4.2 to v5.0 between GPS weeks 1319 and 1325 and after GPS week 1395 can be seen clearly, e.g. between OLG and SGO, BEK and IGE. SUT The UPA solution had had great biases which disappeared after the software change from BSW v4.2 to v5.0. The ASI solutions show a significant periodical (seasonal) behaviour compared to the solutions using BSW. Some of the COE comparisons seem to have a trend in the bias, e.g. to DEO, IGN, ROB. The DEO solutions are biased with respect to the solutions using BSW, but the biases became smaller with BSW v5.0.