7th EUREF Local Analysis Centres Workshop

18 – 19 November 2010, Warsaw, Poland



Results from the test re-processing performed by MUT LAC Mariusz Figurski, <u>Karolina Szafranek</u> and Andrzej Araszkiewicz



1. Pilot re-analysis made for the entire EPN network (all available data) – 'test re-processing' done in 2008;

ROB (Royal Observatory of Belgium) – data from 1996-present

"standard" IGS products

extra IGS sites distributed globally

MUT (Military University of Technology) – data from 1996-2007

"new" IGS products from so-called Potsdam-Dresden IGS reprocessing (performed by M. Rothacher's team)

only EPN sites



- 1. Pilot re-analysis made for the entire EPN network (all available data) 'test re-processing' done in 2008;
- 2. Re-analysis made in the frame of **common tests "repro1" (1996-2007, all available data gathered by EPN CB)**, products from IGS re-processing (IG1), solutions from 2006 combined with other LACs' results;



Re-processing – repro1



Station CHIZ (Chize, France)









Re-processing – repro1









Station EBRE (Roquetes, Spain)







Station EBRE (Roquetes, Spain)

Re-processing - repro1



Solutions for 2006 (linear trend eliminated)

Station CHIZ (Chize, France)





Re-processing – repro1



Solutions for 2006 (linear trend eliminated)

Station CHIZ (Chize, France)

Re-processing - repro1





Solutions for 2006 (linear trend eliminated)

Station CHIZ (Chize, France)



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- 3. Re-analysis made for the 2006 data using PPP (Precise Point Positioning) procedure;



Products: precise ephemeries and satellites clock information from IGS reprocessing ('repro1'), satellites differential code biases and ionospere model from CODE (for clock estmation) **PPP (Precise Point Positiong)** Bernese 5.0 Output: stations coordinates (Bernese format CRD and SINEX), estimated sites' receivers differential code biases

Phase and code observations smoothed using carrier phase were used for phase-consistent receiver clock offset determination

(15-minute intervals – approx. 90 observation epochs for each day).

Phase ambiguities were not estimated.



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Results from the test re-processing performed by MUT LAC









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- 4. Re-analysis made using **alternative software** GAMIT/GLOBK (together with Landmäteriet, Sweden).





PILOT REPROCESSING FOR THE YEAR 2006 IS ALREADY DONE



- Solutions obtained using PDR and IG1 products are very consistent;
- Implementation of IG1 products allowed to obtain more solutions (in comparison to PDR products);
- Time series of PPP solutions are more scattered than solutions obtained using standard, differential method.
 There are some discrepancies probably related to imperfection of PPP method;
- Long-term PPP solutions could give more reliable time series (no network relations).



Still to be done:

- Expression of solutions in IGS08 and ITRF2008;
- Further analyses of results (e.g. outliers explanation and rejection, investigation of residuals and character of noise);
- GAMIT/GLOBK processing strategy development;
- Realisation of the remarks from this Workshop.



Thank you for attention