

NORDISKA KOMMISSIONEN FÖR GEODESI

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Project within the Nordic Commission of Geodesy

ITRS-ETRS89 transformations

Project

Version: June 29, 2012

Accepted by the Presidium: January 17, 2012

Aim/motivation

Need for an accurate connection between ITRS and national ETRS89 realizations for maintenance of national reference frames (continuation of the work done in previous WG of Positioning and Reference Frames). Current transformation recommended by EUREF is not sufficient for cm-level transformations in most Nordic countries due to post-glacial rebound. Previous WG has produced transformation procedures for ITRF2000 and ITRF2005 with intraplate model NKG_RF03vel but future ITRFs and models have not been considered so far.

Outcome /Deliverable

1. Finalize the transformation part of NKG2008 campaign (from the previous WG) including constraining of the solution to ITRF_{yy} and review of possible transformation procedures that take into account post-glacial rebound/plate tectonics in Nordic area to ensure accurate connection between global and national reference frames. Outcome: paper/report
2. Continuation:
 - a. new transformations for ITRF_{20yy} with coordinates based on time series of GNSS stations (dependent on project NKG AC)
 - b. new intraplate model (dependent on WGG)

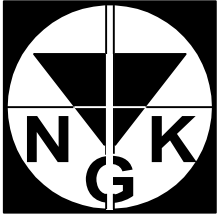
Working Groups and Officers Involved

Working group of Reference Frames, Positioning and Navigation (WGRFPN).

Project leader: Pasi Häkli

Participants:

- DK: Karsten Engsager (to be confirmed)
- EE: Karin Kollo, Priit Pihlak
- FI: Ulla Kallio
- IS: Guðmundur Valsson
- LV: Janis Kaminskis
- LT: Eimuntas Paršeliūnas
- NO: Torbjørn Nørbech
- SE: Lotti Jivall, Martin Lidberg, Anders Alfredsson



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Milestones, Completion Dates

Activity	Short description	Responsible	Completed
1	Project preparation	Pasi Häkli	
2	NKG2008 <ul style="list-style-type: none">constraining studiesfinal solution (and comparison of different methods and software)	Lotti Jivall	October 2012
3	NKG2008 <ul style="list-style-type: none">final transformation	Pasi Häkli	December 2012
4	NKG2008 <ul style="list-style-type: none">report/paper including final results	TBD	2013
5	Review of different transformation approaches/procedures <ul style="list-style-type: none">GIA (deformation) modelstime series instead of campaign based solutions (dense velocity field)interpolation techniqueshandling of different ITRFs and future models without jumps...outcome: paper	TBD	2013-2014
6	Official NKG transformation using: <ul style="list-style-type: none">time series(and new intraplate model)		2014 (after reprocessing in NKG AC project)
7	Maintenance of national ETRS89 realizations in the Nordic countries <ul style="list-style-type: none">GIA taken into account		

Proposed Meeting Schedule

At least WG meetings but additional project meetings probably needed as well

Project Monitoring and Reporting

Short status reports for the Presidium meetings.



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Resources required

Activity	Short description	Estimation of resources
1	Project preparation	Pasi Häkli: 1-2 days
2	NKG2008: constraining studies	Lotti Jivall 1-2 weeks Pasi Häkli: 1 week Karin Kollo
3	NKG2008: final transformation	Pasi Häkli: 1-2 weeks Martin Lidberg Torbjørn Nørbech Karsten Engsager Anders Alfredsson
4	NKG2008: report/paper	TBD
5	Review of different transformation approaches/procedures	TBD
6	Official NKG transformation	TBD
7	Maintenance of national ETRS89 realizations	

Sent in by
Pasi Häkli