



Possible mechanism for recognition of height systems/frames from EUREF in the perspective of INSPIRE

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L A N T M Ä T E R I E T



Background

Within the framework of INSPIRE (*Infrastructure for Spatial Information in the European Community*) it has been developed rules regarding availability and format of spatial information within the European community. These rules will become mandatory and included in European law. One important theme for such rules are geodetic reference frames. In these rules it is mandatory to use:

- ETRS89 for geographical coordinates, and as base for coordinates in map-projections
- EVRS/EVRF for “gravity related heights”

Some thoughts...

- First – the decisions to adopt ETRS89 and EVRS must be considered good!
- But what coordinates and heights can be considered to fulfil the requirements for ETRS89 or EVRS?
- Regarding ETRS89 there is a mechanism in place where “national” realizations are recognized and accepted by EUREF through resolutions
- Regarding EVRS such mechanism is missing!

Potential problem...

- Possible discussions on when a height value can be considered to be a realisation of EVRS
 - E.g. the new national height systems in the Nordic area, where height values on bench marks agree with EVRF2007 on the sub-mm (but there is a distinct bias at the 5mm level)
 - national levelling projects are going on, and there will be new national adjustments where the time table will be different to new releases of EVRF
- Transformations are demanded for national height systems that is not computed following the EVRS conventions, but where the height values agree at the few centimeter level with EVRF2007
 - E.g. Denmark, but probably also many other examples

To consider

- ETRS89 and EVRS are EUREF “products”
- Therefore EUREF should be active regarding its use (also for less demanding applications)
- We may want to avoid a situation where some other organization/mechanism are invented for regulation of ETRS89 and/or EVRS within the framework of INSPIRE, which is out of control of EUREF!

Proposal

- EUREF provide the possibilities for accepting national realizations of height systems as improvements and/or densifications of EVRS e.g. through resolutions
 - EVRF2007 is only available at the nodal points – thus densifications
 - New levellings may be considered as improvements
 - An uncertainty level may be stated in the resolution (similar to the “1 cm” sometimes mentioned for ETRS89)
- Possibly a good support for the national authorities
- would also fit well in to the spirit of the MoU between EUREF and EuroGeographics!



Action item from Padova TWG

The TWG asks G. STANGL, M. LIDBERG, J. MÄKINEN, J. TORRES and M. SACHER to work out a document *What does EUREF considers as a realization of EVRS?* and circulate it among the TWG for further discussion.

We have a first draft, but we need to work more on this until we have something ready for TWG

[EVRS_TWG_20100308.doc](#)

About information on the web

Much information is available on the web:

- [BKG - Information System EVRS - EVRF2007.mht](#)
 - [D:\MINA-DOC\EUREF\TWG\TWG_2010mars_Wien\EVRS_wg\BKG - Information System EVRS - Height Datum Relations.mht](#)
 - [TparNationalEVRF2007,property=poster.gif](#)
 - [CRS-EU Home.mht](#)
 - [CRS-EU national CRS.mht](#)
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- Martina Sacher is working on computing new transformation parameters from national height systems to EVRF2007. She reports that updating the CRS website is however time-consuming.

Possible strategies...

EUREF and TWG may have options on what to do:

1. Implementing something where national height systems are accepted as improvements or densifications of EVRS.
(Not so sure that this is best option anymore)
2. Updating the information on the web, where most/all relevant information (hopefully) will be available soon
3. Possibly also recognize a national realization to be coincident with EVRS at the X cm level (similar to Greece?)

To consider is areas where new levellings are foreseen!?

For the moment work in direction of option 2 and postpone further decisions!?