

October 26, 2008

A first draft towards a charter for a working group on future realization of ETRS89

The purpose of the working group is to look for a modern way of realizing ETRS89, providing continuity in the coordinates between realizations, i.e. jumps in the time series should be on the average zero, giving more weight to the EPN (only part of the EPN stations are included in ITRF2005) and self contained, less dependent from ITRFyy.

The way to get there

A working group has been proposed including some 5 to maybe 8 persons. (Carine and Johannes have thought of some good names.)

I think we in this group need to start to think and discuss and agree on what ETRS89 have been so far, and how it has been understood (or possibly miss-understood?) from the user community. Then we can start to think of what we want it to be and how we would like it to be used in the future. I think it is good if we have some common view on this before we start to work on how future realizations of ETRS89 should be performed.

The work may then be divided into some different sub-tasks:

1. The history of ETRS89

I think a document about the history about ETRS89 would be fruitful, especially for us who did not participate from the very beginning. There are pretty much written, and a starting point may be the paper for the IAG meeting in Birmingham ("The European Reference System Coming of Age"). I can think of some 10-15 pages (for internal use at least in the beginning).

The history document should be complemented with an inventory about where we have ETRS89 (more or less the adopted campaigns and EPN). I guess this is more or less available, but personally I need to update myself. What may also be important (how important must be discussed within the w.g.) is which countries have actually

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changed and is now using a realization of ETRS89 as national geodetic reference frame for surveying, cadastre, and mapping purposes. It should be concluded within the w.g. whether it is important or not for future realizations of ETRS89 to stay close (on the co-ordinate level) to these national realizations (but this last part belongs to next sub-task).

2. What do we want ETRS89 to be and how do we think it should be used?

What is in my mind is:

- Do we see a future where we would like to have all countries to change to ETRS89 as a national geodetic reference frame, and “all surveyors in Europe use ETRS89 in their daily work”!?
- Or do we see that ETRS89 will be a “transformation hub” which is used for exchange of data between countries, authorities, and companies?!
- What is/will be the role of ETRS89 in (real time) positioning services? Both EUREF-IP and the Network-RTK services available in large areas of Europe?
- Intraplate deformations are of utmost importance for maintenance/management of ETRS89. However, I am not sure if this should be covered in this sub-task.
- We may also spend some (but maybe limited) effort to think of ETRS89 in the perspective of Galileo and possible precise positioning services.

3. Future realizations of ETRS89

Based on some common view on what is mentioned above, a modern/modernized way to realize ETRS89 will be discussed. As given in the introduction, EPN will and should play an important role in this.

The work to achieve this may be done following two slightly different paths:

1. A proposed best way based on currently available products, infrastructure, current knowledge etc
2. how an improved realization could have been done, and what are at the moment missing (but could in the future be made available) to make this possible.

To be considered is also the “action area” (didn’t find a better name right now) for ETRS89. I think “extended to the east up to Ural” have been used some times. (I don’t think Russia will switch to ETRS89, but for data exchange it may be useful now or in the future.) Depending on this, we may consider that we have a good coverage with EPN-sites in Central and Western Europe, while the amount of permanent GNSS sites is more limited towards the east.

A stop here for the moment.