QGIS Application - Bug report #10990
Inconsistency in the re-projection between ED50 (epsg23031) and ETrS89 (25831)

2014-07-31 03:33 AM - alobo -

Status:	Closed			
Priority:	Normal			
Assignee:				
Category:	Projection Support			
Affected QGIS version:	2.0.1	**Regression?:**	No	
Operating System:		**Easy fix?:**	No	
Pull Request or Patch supplied:	No	**Resolution:**	invalid	
Crashes QGIS or corrupts data:	No	**Copied to github as #:**	19333	

Description

I've found an inconsistency in the re-projection between
ED50 (epsg23031) and ETRS89 (25831) both in UTM31N

ed50.jpeg
https://dl.dropboxusercontent.com/u/3180464/ed50.jpeg
shows a project, image and vector layer all in epsg23031
erts89.jpeg
https://dl.dropboxusercontent.com/u/3180464/etrs89.jpeg
shows a project and image in epsg25831 and the vector layer in epsg23031

In both cases, reprojection on the fly is activated.
A reprojected version (to epsg25831) of the vector layer is
exactly coincident with the display of the vector layer in etrs89.jpeg

images correspond to WMS layer ortoi5m in
http://geoserveis.icc.cat/icc_mapesbase/wms/service?
where the appropriate CRS is automatically selected.

Vector layer:
https://dl.dropboxusercontent.com/u/3180464/ALGCPTetraED50zv2.zip

Any explanation to this behavior?

Thanks

History

#1 - 2014-07-31 09:48 AM - Giovanni Manghi

- Affected QGIS version changed from 2.4.0 to 2.0.1

- Status changed from Open to Feedback

- Priority changed from High to Normal

I'm not expert of Span CRSs, but isn't expected a small error when reprojecting between those two CRSs (unless using more precise methods, like datum tranformation grids)?

#2 - 2014-08-01 12:27 AM - alobo -

I would not qualify the error as "small" in these days

of uav imagery and sub-metric gps coordinates, but the

fact is that using

http://www.icc.cat/cat/Home-ICC/Geodesia/Recursos/Calculadora#

I get a systematic difference of 2m vs. the conversion

made by QGIS. I agree this is probably not a bug but

a limitation of the method used by Qgis, but let's wait

to see if any expert can enlighten us further.

In case we conclude this is not a bug but a limitation,

somewhere in the manual (also in the panel, besides the "on the fly"

notice?) the user should be warned of this possible error when

converting among datums.

#3 - 2014-08-01 04:36 AM - Da Silva

There is a pull request https://github.com/qgis/QGIS/pull/1506 waiting to be merged that can help solve your problem. It allows to recall the datum

transformation dialog to change the a layer's coordinate transform. If you choose tfm 1633 you get a result similar to ed50.jpg.

The problem is that in actual state we don´t have information about area_of_use from srs.db so a lot of tfm's are not valid.

#4 - 2014-08-01 07:51 AM - Giovanni Manghi

Da Silva wrote:

> *There is a pull request https://github.com/qgis/QGIS/pull/1506 waiting to be merged that can help solve your problem. It allows to recall the datum*
>
> *transformation dialog to change the a layer's coordinate transform. If you choose tfm 1633 you get a result similar to ed50.jpg.*
>
> *The problem is that in actual state we don´t have information about area_of_use from srs.db so a lot of tfm's are not valid.*

more in general:

datum transformations are not error free. In QGIS precision depends on how CRSs are defined in Proj, so if there is a (relatively) small problem such in this

case it is likely that depends on how CRSs are defined there. An example I know better: in Portugal the transformation from Datum Lisboa and ETRS89

can lead to huge errors if using Datum Lisboa as defined by ESRI. If using Datum Lisboa as defined in proj the error is just a few tens of cm. But if using

NTV2 grids (that can be used in QGIS) then the precision is measurable in mm. Official services like

http://www.icc.cat/cat/Home-ICC/Geodesia/Recursos/Calculadora

are likely to use the most precise way to do Datum transform, NTV2 grids, so the difference should be explained.

#5 - 2014-10-11 07:46 AM - Giovanni Manghi

- Resolution set to invalid

- Status changed from Feedback to Closed

closing for lack of feedback, please reopen if necessary.