Product Bulletin

Trimble Positioning Services
TAP202011-1045-PB
December 2020

COORDINATE ENHANCEMENTS FOR CENTERPOINT RTX CORRECTIONS WITH TRIMBLE ACCESS 2020.20 AND TRIMBLE BUSINESS CENTER 5.40

CenterPoint® RTX Now Even Easier To Use

Customers using Trimble Access 2020.20 are now able to automatically obtain a real-time CenterPoint RTX® position in their local reference frame without the need for a site calibration or offset. This significantly reduces the field setup time for the surveyor and streamlines the workflow when using CenterPoint RTX correction service. More surveyors can now be untethered - free of the hassle of being in range of a VRS Now network or setting up a base station - to get the accuracy that they need in real-time. Trimble Access (TA) 2020.20 and Trimble Business Center (TBC) 5.40 introduce enhancements to coordinate systems when dealing with CenterPoint RTX positioning.

PLEASE NOTE: These enhancements result in a more accurate position to match to a national reference frame. However, these positions will be different to prior versions of the software. The coordinate enhancements are not backwards compatible.

RECOMMENDATION: *Upgrade to Trimble Access 2020.20 and Trimble Business Center 5.40 before starting any* ***new*** *projects or jobs using CenterPoint RTX. If you have already started a project or a job with CenterPoint RTX and TA 2020.11 (TBC 5.32.1) or earlier, then do not upgrade Trimble Access or TBC until the project/job is completed to avoid any coordinate differences.*

If you do need to upgrade an existing job/project, review the details of how coordinates will change in the tables below. With changes in coordinates, both site calibrations and RTK-RTX offsets will need to be re-measured.

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Coordinate system enhancements

CenterPoint RTX positions are now transformed using local displacement models. Improvements have been made to the time-dependent coordinate transformation feature, which is used to transform CenterPoint RTX positions between ITRF2014 at the epoch of measurement and the global reference frame:

- Local displacement models are used when available.
- Where no local displacement model is available, Trimble Access uses ITRF2014 tectonic plate velocities, (instead of the MORVEL56 tectonic plate models that were used in earlier versions).
- Country-specific realizations of the ETRS are used in Europe.

All of these improvements result in better representation of the position in the selected coordinate system, ensuring that users obtain optimal accuracy in coordinate transformations and the best possible coordinates in the selected coordinate system.

Countries with coordinate system enhancements

Country	Reference frame	Local displacement model
Australia	GDA2020	None*
Brazil	SIRGAS2000	VEMOS2009
Canada	NAD83(CSRS)v7	CSRS Velocity Grid V7.0
Denmark	EUREF-DK94	NKG-RF03
Estonia	EST97	NKG-RF03
Finland	EUREF-FIN	NKG-RF03
France	RGF93v2	ITRF2014
Germany	ETRS89-DR91(R16)	ITRF2014
Iceland	ISN2016	ISN2016
New Zealand	NZGD2000	NZGD2000 Deformation Model
Norway	EUREF89	NKG-RF03
Russia	PZ-90.11	None
Sweden	SWEREF99	NKG-RF03
UK	OSNetv2009	ITRF2014
USA	NAD83(2011)	HTDP V3.2.9

* Australia does not use a displacement model, since the tectonic plate motion is captured in the published 14-parameter datum transformation.

Differences between software versions when using CenterPoint RTX

Software Version	Stored Position	Transformation	Key Enhancement
Prior to TA 2020.00 Prior to TBC 5.30	ITRF2008/2014 Epoch 2005.0 (calculated from **MORVEL56 tectonic plate** models)	Static Datum Transformations (e.g. 7-parameter, Molodensky, etc.)	N/A
TA 2020.00 & 2020.11 TBC 5.30 to 5.32.1	ITRF2014 Observed Epoch	Time Dependent Transformation (i.e. 14-parameter) **MORVEL56 tectonic plate** model	• Addition of Time Dependent Transformations
TA 2020.20 TBC 5.40	ITRF2014 Observed Epoch	Time Dependent Transformation (i.e. 14-parameter) **Local displacement models** where available **ITRF2014 tectonic plate** model elsewhere	• Addition of local displacement models • Switch from MORVEL56 to ITRF2014 tectonic plate model

Upgrade matrix when using CenterPoint RTX

		Project/Job *Used* in Software Version (To)	
		TA 2020.00 & 2020.11 **TBC 5.30 to 5.32.1**	**TA 2020.20** **TBC 5.40**
Project/Job *Created* in Software Version (From)	**Prior to TA 2020.00** **Prior to TBC 5.30**	Coordinates will not change. TA and TBC will use Static Datum Transformations, and will not take advantage of Time Dependent Transformations.	Coordinates will not change. TA and TBC will use Static Datum Transformations, and will not take advantage of Time Dependent Transformations.
	TA 2020.00 & 2020.11	Coordinates will not change. TA and TBC will use Time Dependent Transformations with the MORVEL56 tectonic plate model.	Coordinates will change and positions will be different (more accurate). TA and TBC will use Time Dependent Transformations with local deformation models if available, otherwise the ITRF2014 tectonic plate model.
			TBC: A warning will be displayed when coordinates are recomputed using new parameters TA: A warning will be displayed asking if you would like to upgrade your job
	TBC 5.30 to 5.32.1		TBC: Coordinates will not change. TA: Coordinates will not change, but there will be a mismatch against new observations.
	TBC 5.40	TBC: Coordinates will not change. TA: Coordinates will not change, but there will be a mismatch against new observations.	Coordinates will not change. TA and TBC will use Time Dependent Transformations with local deformation models if available, otherwise the ITRF2014 tectonic plate model.
	TA 2020.20	TBC: Coordinates will change and positions will be different (less accurate). TA: Job file import is not supported. Coordinates from JXL will not change, but there will be a mismatch against new observations	

More Information

For more information, contact your local Trimble Positioning Services Customer Care team. Contact information available at https://positioningservices.trimble.com/contact/

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