

## Coordinate System Adopted in GEODNET RTK Service

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GEODNET supports both the widely adopted global Geodetic Coordinate Systems (for example, WGS84, ITRF2014, and ITRF2020) and regional Geodetic Coordinate Systems for mapping purposes (for example, NAD83 and ETRS89). GEODNET uses different mountpoints to support various Geodetic Coordinate Systems. GEODNET can customize mountpoint with a special Geodetic Coordinate System based on user's requests.

Table 1. Mountpoints of GEODNET RTK service

#	Mountpoint lists	Details
1	AUTO	Regional Geodetic Coordinate System (RGCS)
2	AUTO_ITRF2020	ITRF2020 Geodetic Coordinate System at epoch 2015.0
3	AUTO_ITRF2014	ITRF2014 Geodetic Coordinate System with current epoch
4	AUTO_WGS84 <sup>1</sup>	WGS84(G2139) in the middle of the current year (for example, 2025.5 for year 2025, 2024.0 for year 2024)

The Geodetic Coordinate System of the AUTO will change based on the regions to match the regional Geodetic Coordinate Systems, the currently adopted regional Geodetic Coordinate Systems are listed as below (Table 2).

Table 2. Regional Geodetic Coordinate System

#	Geodetic Coordinate System Name	Epoch #	Effective regions
1	NAD83(2011)	2010.0	USA and North America
2	NAD83(PA11)	2010.0	USA Hawaii
3	NAD83(MA11)	2010.0	GUM
4	NAD83(CSRs)	2010.0	CAN
5	ETRS89(ETRF2010)(2010.0)	2010.0	Europe
6	GDA2020(2020.0)	2020.0	AUS
7	NZGD2000(2000.0)	2000.0	NZL
8	TUREF(2005.0)=ITRF96(2005.0)	2005.0	TUR
9	ITRF2008(2005.0)=ITRF2008(2005.0)	2005.0	IND
11	ITRF2008(2011.811)	2011.811	NGA
12	NGD2012(2012.0)=ITRF2008(2012.0)	2012.0	NGA
13	PGD2020=ITRF2014(2020.044)	2020.044	PHL
14	ITRF2014(2010)	2010.0	MEX
15	ITRF2014 current epoch	Current	KEN
16	CGCS2000(2000.0)=ITRF97(2000.0) <sup>2</sup>	2000.0	CHN

17	JGD2011(2011.3945)=ITRF2008(2011.3945)	2011.3945	JPN
18	IGRS2013(2012.0)=ITRF2008(2012.0)	2012.0	IDN
19	ITRF1991(1994.0)	1994.0	ZAF
20	WGS84(G730)(1994.0)	1994.0	LKA
21	ITRF2020(2023.0)	2023.0	TWN
22	ITRF2014(2010)	2010.0	THA
23	KGD2002(2002.0)=ITRF2000(2002.0)	2002.0	KOR
24	MGRF2020(2020.0)=ITRF2020(2020.0)	2020.0	MYS
25	MTRF2000(2004.0)=ITRF2000(2004.0)	2004.0	ARE
26	SIRGAS2000(2000.4)=ITRF2000(2000.4)	2000.4	South America
27	WGS84(G2139)(20xx.5) <sup>1</sup>	20xx.5 <sup>1</sup>	Other regions

<sup>1</sup> The WGS84 is used in AUTO\_WGS84, since WGS84 is a global dynamic coordinate system, where the coordinate of the station will change due to the global plate tectonics movement. The WGS84(G2139)(20xx.50) with the middle of current year is adapted to best match the current GPS real-time orbit based on NGS recommendations.

<sup>2</sup> GEODNET does not provide RTK service in this region now, can broadcast partnerships' RTK/VRS service in this region based on user requests.