

# HxGN SmartNet Services

We have you covered. Everywhere.

Country Coordinate System <sup>1</sup>		
Coordinate Reference Frame	Network correction data for the national coordinate systems ETRS89/DREF91, realization 2016	
	Transformation parameter ("Transformation option") in the national coordinate systems <sup>2</sup> ) valid at the location of the positioning	
	The quality of the transformation parameters varies in the 16 federal states as well as in location and altitude <sup>3,4</sup>	
		Position transformation (DFLBF) from ETRS89 in the local position coordinate system (possibly with Position status (LST)): <ul style="list-style-type: none"> <li>• Baden-Wuerttemberg (BW): approx. 3 cm, LST100</li> <li>• Bavaria (BY): approx. 10 cm</li> <li>• Berlin (BE): approx. 5 cm</li> <li>• Brandenburg (BB): approx. 5 cm</li> <li>• Bremen (BR): approx. 5 cm</li> <li>• Hamburg (HH): approx. 5 cm</li> <li>• Hesse (HE): approx. 2 cm, LST100</li> <li>• Mecklenburg-Western Pomerania (MV): approx. 5 cm, RD83</li> <li>• Lower Saxony (NI): approx. 5 cm, LST100</li> <li>• North Rhine-Westphalia (NW): approx. 10 cm, Netz77</li> <li>• Rhine-Palatinate (RP): approx. 2 cm, LST180</li> <li>• Saarland (SL): approx. 5 cm</li> <li>• Saxony (SN): approx. 5 cm, RD83</li> <li>• Saxony -Anhalt (ST): approx. 5 cm, LST150</li> <li>• Schleswig-Holstein (SH): approx. 10 cm</li> <li>• Thuringia (TH): approx. 5 cm, PD83</li> </ul> Altitude transformation (DFHBF) from ETRS89 in the local altitude reference frame: <ul style="list-style-type: none"> <li>• all 16 federal states: approx. 3 cm, altitude above standard elevation zero (NHN) im DHHN92 and/or DHHN2016</li> </ul>

1. The correction data is based on a reference station infrastructure for the territory of the Federal Republic of Germany. The reference station metadata of this reference station infrastructure are made available by the central office SAPOS® of the working group of the surveying authorities of the federal states of the Federal Republic of Germany with the care required to fulfill their public tasks. This reference station metadata consists of the official coordinates of the reference stations, the centering parameters of the receiving locations and the raw, satellite geodetic signals of the GNSS received at the reference stations in real time. In selected areas, for example near the border, the reference station infrastructure is partly located outside of the Federal Republic of Germany due to reference station metadata of additional reference stations, compressed if necessary.
2. The transformation parameters provided by the service provider into the national coordinate system valid at the location of the positioning come from a calculation by the engineering office Seiler, Bühlertal from their own databases DFHBF and DFLBF for the 16 federal states.
3. The quality of the transformation parameters is calculated from the connection points used or their gaps in the underlying local network (or their position and altitude status). The quality can be locally lower due to inhomogeneities in this local network. The suitability for position and altitude coordinates, which originate from a different, generally earlier measurement period than that of the connection points, cannot be inferred from the quality specification, since point changes in the meantime can also be the cause. No guarantee can be given for such point changes. They therefore do not represent a defect in the transformation parameters.
4. The Service Provider reserves the right, at its sole discretion and without any obligation in this respect, to update (i) the transformation parameters including their quality with regard to their location and/or altitude status and (ii) the use of underlying spatial reference systems including their implementation. The customer will be informed of such an update at least one (1) month before it comes into effect.