

1 WorldDEM^{®1} Portfolio

- WorldDEM_{core}:** This product is a Digital Surface Model (DSM) representing the surface of the Earth incl. buildings, infrastructure, and vegetation. This DSM is output of the interferometric processing without any refinement (editing). This product usually contains radar specific artefacts, voids and can include processing artefacts.
- WorldDEM:** This product is a refined DSM ensuring hydrological consistency, i.e. flattening of water bodies and consistent flow of rivers, and includes editing of shore- and coastlines.
- WorldDEM DTM:** This product is a Digital Terrain Model (DTM) representing bare Earth terrain without obstruction features above ground.

2 Specification

Table 2-1: WorldDEM - Specification

Specification Parameter		WorldDEM _{core} , WorldDEM, and WorldDEM DTM
File Format		GeoTIFF
Data Type		32 Bit, floating
NoData Value		-32767.0
Projection		Geographic Coordinates
Coordinate Reference System	Horizontal	WGS84-G1150
	Vertical	EGM2008
Pixel Spacing		0.4 arcsec (approx.12m)
Vertical Unit		Meter
Absolute Vertical Accuracy *) **) ***)		< 4m (90% linear error)
Relative Vertical Accuracy *) **) ***)		< 2m (slope ≤ 20%) < 4m (slope > 20%) (90% linear point-to-point error within an area of 1° x 1°)
Absolute Horizontal Accuracy **) ***)		< 6m (90% circular error)

*) Based on validation results using ICESat GLAS reference points (TanDEM-X Mission Goal: < 10m)

**) Excluding Antarctica and Greenland (physical reflection properties differ between WorldDEM and reference data in regions with permanent snow/ice cover)

***) Due to the global coverage of the WorldDEM, all accuracy statistics and values stated in this document are calculated as an arithmetic mean on global level. Local deviations occur.

¹ WorldDEM is a trademark of Airbus DS Geo GmbH registered in the following countries: European Union, United States of America, Canada, Japan, Republic of Korea, Singapore, Australia, Norway

3 Auxiliary Data Layers and Quality Layers

Auxiliary Layers are delivered together with the WorldDEM_{core} product. They include the following layers:

Table 3-1: WorldDEM_{core} - Auxiliary Data Layers

Auxiliary Layer		Data Format
Amplitude Mosaic (mean value)	AMP	16 bit unsigned integer, GeoTIFF
Amplitude Mosaic (min. value)	AM2	16 bit unsigned integer, GeoTIFF
Consistency Mask	COM	8 bit unsigned integer, GeoTIFF
Coverage Map	COV	8 bit unsigned integer, GeoTIFF
Height Error Map	HEM	32 bit floating point, GeoTIFF
Layover/Shadow Mask	LSM	8 bit unsigned integer, GeoTIFF
Water Indication Mask	WAM	8 bit unsigned integer, GeoTIFF
Reliability Mask	RLM	8 bit unsigned integer, GeoTIFF

Quality Layers can be optional delivered with the WorldDEM and WorldDEM DTM products. They include the following layers:

Table 3-2: WorldDEM and WorldDEM DTM - Quality Layers

Auxiliary Layer		Data Format
Amplitude Mosaic (mean value)	AMP	16 bit unsigned integer, GeoTIFF
Filling Mask	FLM	8 bit unsigned integer, GeoTIFF
Editing Mask*	EDM	8 bit unsigned integer, GeoTIFF
Water Body Mask	WBM	8 bit unsigned integer, GeoTIFF

* not included in Quality Layer package for WorldDEM DTM

4 Technical Specification Document

The Technical Specification Document is available on request and describes the WorldDEM products and specification in more detail including impacts of SAR specific characteristics, information on changing of pixel spacing depending on latitude, file structure, file naming convention, metadata and quicklooks.