

## Technical Information

### Elevation4 Digital Surface Model

<b>Method</b>	Automatic stereo matching including auto-filtering of artefacts followed by manual editing. After editing tasks, all remaining voids are interpolated. Large voids over areas that are not flat are filled in with stereo data. Final visual quality check.
<b>Manual Editing Level</b>	<ul style="list-style-type: none"> <li>• Detection of water bodies (sea, lake, large river) and DEM flattening.</li> <li>• Removal of main artefacts (spike, hole).</li> <li>• Manual editing.</li> <li>• Main roads in city centres will be cleaned up to remove artificial obstructions.</li> </ul>
<b>Source Data</b>	Pléiades Stereo or Tristereor pair(s), Pansharpened, Primary, JPEG 2000 Regular
<b>Available Option</b>	50cm Pléiades orthoimage
<b>Grid Spacing</b>	4m
<b>Accuracy</b>	<b>Absolute XY*</b> <ul style="list-style-type: none"> <li>• With accurate GCPs: 1.5m CE90.</li> <li>• With Ref3D GCPs: 6 to 10m CE90**.</li> <li>• Without GCPs: 8.5m to 10.5m CE90.</li> </ul>
	<b>Absolute Z*</b> <ul style="list-style-type: none"> <li>• With accurate GCPs: 2m LE90.</li> <li>• With Ref3D GCPs: 6 to 10m LE90**.</li> <li>• Without GCPs: up to 10m LE90.</li> </ul>
	<b>Relative</b> <ul style="list-style-type: none"> <li>• XY: 1,5m CE90.</li> <li>• Z: 2m LE90.</li> </ul>
<b>Format</b>	AsciiGrid or GeoTIFF.
<b>Projection</b>	Geo WGS84 or UTM / WGS84 (custom projection on request).
<b>Vertical Unit</b>	Metres
<b>Vertical Reference</b>	Elevations above mean sea level (ref. = EGM96).
<b>Accuracy Level</b>	The accuracy specification of Elevation4 (with GCPs) is similar to the HRE40 NGA classification.

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**GCPs**

- Ground control points can help to attain optimal accuracy.
- The customer can provide accurate GCPs (~50cm XYZ) that are visible in the stereopair.

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**AOI**

- Large AOIs can be covered by adjacent stereopairs; the DEM mosaic will be seamless with no edge effect.
- A minimum width of 10km is required.
- Minimum area = 100 sq.km. / Maximum area = 2,000 sq.km. (larger areas will be considered on a case-by-case basis).

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**No Data Value**

- The value -32767 is set for areas where the elevation is not determined (around AOI).
- Potential clouds (if any) are considered as 'No Data'.

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**Metadata**

No additional metadata is provided with the DEM.

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**Tiling**

DEM 4m tile is 50km x 50km (~600 Mb).

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**B/H Ratio**

- The optimal B/H ratio is in the range of [0.3 – 0.6].
  - A high ratio (i.e. 0.6) is suitable for flat areas with small buildings.
  - A low ratio (i.e. 0.3) is suitable for steep terrain or high buildings.
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