

## Technical Information

### Elevation4 Digital Terrain Model

<b>Method</b>	DTM generated by automatic filtering of DSM produced from Pleiades stereo imagery, complex areas are completed by manual stereo editing,	
<b>Manual Editing Level</b>	<ul style="list-style-type: none"> <li>• Manual stereo editing of complex areas including areas with a high density of above ground features</li> <li>• Detection of water bodies (sea, lake, large river) and DTM flattening</li> <li>• Hydro Enforcement - To insure hydrologically correct drainage network, this will be limited to the major drainage network, where continuous stretches of water are visible on the imagery</li> </ul>	
<b>Source Data</b>	Pleiades Stereo pair(s), Level Primary Regular, Format DIMAP JPEG2000 Cloud coverage < 5% (Where cloud appears in the source images ,it will not be possible to calculate terrain elevation values)	
<b>Grid Spacing</b>	4m	
<b>Available Options</b>	Orthomosaic 50cm	Contour lines 5m
<b>Accuracy</b>	<b>Absolute XY*</b>	<ul style="list-style-type: none"> <li>• With GCPs : 1.5m CE90</li> <li>• With Ref3D GCPs : 6 to 10m CE90</li> <li>• Without GCP: 8.5m to 10.5m CE90</li> </ul>
	<b>Absolute Z*</b>	<ul style="list-style-type: none"> <li>• With GCPs : 2.0m LE90</li> <li>• With Ref3D GCPs : 6 to10m LE90</li> <li>• Without GCPs: up to 10m LE90</li> </ul>
	<b>Relative Z*</b>	<ul style="list-style-type: none"> <li>• With GCPs : 1.5m LE90</li> <li>• With : Ref3D GCPs 4m LE90 (A global slopes of up to 0.02% may be present across the dataset)</li> <li>• Without GCPs: up to 4m LE90 (A global slopes of up to 0.02% may be present across the dataset)</li> </ul>
<b>Format</b>	DTM - ASCII Grid / GeoTIFF(32bit float) Ortho Image - GeoTIFF (3 bands 8bit)	

<b>Projection</b>	Geo WGS84 or UTM / WGS84 (custom projection on request)
<b>Vertical Unit</b>	Metre
<b>Vertical Reference</b>	Elevations above mean sea level (ref. = EGM96).
<b>Accuracy Level</b>	The accuracy specification of GeoTerrain4 is similar to HRE40 NGA classification ("HRE" means High Resolution Elevation)
<b>GCPs</b>	<ul style="list-style-type: none"> <li>• It is recommend that 5 GCP's distributed across each stereopair are recommended to reach a metric accuracy level</li> <li>• The customer needs to provide accurate GCPs (~20cm XYZ) that are visible in the stereopair.</li> </ul>
<b>AOI</b>	<ul style="list-style-type: none"> <li>• Large AOI can be covered by adjacent stereopairs, the DTM mosaic will be seamless with no edge effect.</li> <li>• Minimum area of 100 km<sup>2</sup>, with a minimum width of 10 km.</li> </ul>
<b>No Data Value</b>	<ul style="list-style-type: none"> <li>• The value -32767 is set for areas where the elevation is not determined.</li> </ul>
<b>Metadata</b>	No additional metadata is provided with the DTM.
<b>B/H Ratio</b>	<ul style="list-style-type: none"> <li>• The optimal B/H ratio is in the range of [0.3 – 0.6].</li> <li>• A high ratio (i.e. 0.6) is suitable for flat areas or small buildings.</li> <li>• A low ratio (i.e. 0.3) is suitable for stiff landscape or high buildings.</li> </ul>
<b>Remark</b>	GeoTerrain 4 DTM will provide very good results where a high percentage of the ground is visible on the imagery. While areas that have a high percentage of ground that is obscured by above ground features, such as buildings & trees, where the DTM will be interpolated from surrounding areas of visible ground, will not be as detailed. In cases where the ground is continuously obscured for large areas, it will not be possible to generate GeoTerrain4. Areas of clouds (and their shadows) will be masked to NoData in the DTM as ground elevations cannot be computed.