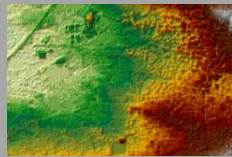
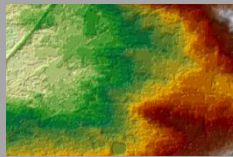
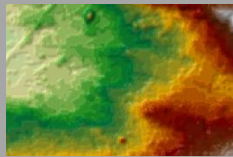


Euro-Maps 3D Product Description

Products	Euro-Maps 3D DSM	Euro-Maps 3D DTM	Euro-Maps 3D for Ortho
			

Product Specifications

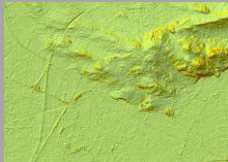
Type	DSM	DTM	DEM
Post Spacing	5 m	5 m	10 m
Absolute Horizontal Accuracy	CE90 5-10 m	CE90 5-10 m	CE90 5-10 m
Absolute Vertical Accuracy	LE90 5-10 m	The accuracy depends on the specific area of interest	LE90 5-10 m
Relative Vertical Accuracy	LE90 < 3 m	LE90 < 3 m	LE90 < 3 m
Satellite Data	IRS-P5 Cartosat-1 PAN-A and PAN-F in-flight stereo data		
Spatial Reference System	DD, UTM or other projections on WGS84		
Height Reference System	EGM96, EGM2008 or WGS84		
Format	GeoTIFF, 16-bit signed integer		
Water Bodies	Allocation of constant heights for standing waters bigger than 2500 m ² and hydrological gradient for flowing waters wider than 50 m for more than 1 km	Major water bodies are flattened	
File Naming	Individual files of the product are composed in the following way: <Product-family>_<Internal-ID>_<QC-date>_<Area>_<Layer-name>.<Extension> e.g. em3d_094638_20191213_020E045NPC_dsm.tif For detailed information on naming conventions and data formats please see < LINK >		
Tiling	0.5° x 0.5°		

Additional Layers

Accuracy Vertical Layer	✓	✓	x
Mask Layer	x	✓	x
Number Layer	✓	✓	x
Ortho Layer, Pixel Size	optional, 2.5 m	optional, 2.5 m	✓, 2.5 m
Quality Layer	✓	✓	x
Source Layer	✓	✓	x

Product Layers

_acv.tif

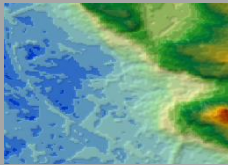


The **accuracy vertical layer** contains a value corresponding to the absolute vertical accuracy for each quality controlled height value.

Format: 8-bit unsigned integer

Value	Description
0	may not meet the quality described in the product specifications
5	5 m for slopes < 20 %
7	7 m for slopes 20 % - 40 %
10	10 m for slopes > 40 %
255	NoData

_dem.tif

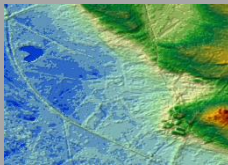


The **digital elevation model layer** contains the height values as a geocoded raster file. This layer consists of a good approximation to a DTM for urban areas and a DSM elsewhere.

Format: 16-bit signed integer

Value	Description
n	height above reference system in m
-32767	NoData

_dsm.tif

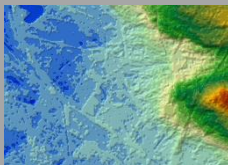


The **digital surface model layer** contains the height values as a geocoded raster file.

Format: 16-bit signed integer

Value	Description
n	height above reference system in m
-32767	NoData

_dtm.tif

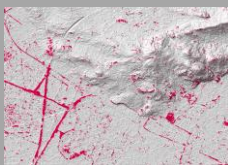


The **digital terrain model layer** contains the height values as a geocoded raster file. This layer is derived from a DSM and shows the terrain heights (vegetation and buildings removed). With the DTM, a mask layer is also provided to be able to trace the DSM to DTM conversion. For the DTM product the availability and accuracy depends on the specific area of interest.

Format: 16-bit signed integer

Value	Description
n	height above reference system in m
-32767	NoData

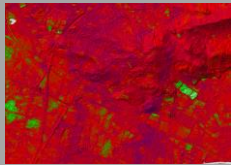

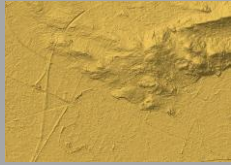
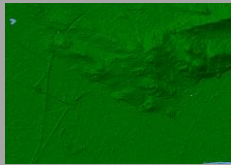
_msk.tif



The **mask layer** is set to 1 for each height value that was modified during the DSM to DTM conversion.

Format: 8-bit unsigned integer

Value	Description
0	not modified
1	modified
255	NoData

<p>_num.tif</p> 	<p>The number layer contains the information on how many image pairs the matching was successful and therefore from how many matches the height value was derived.</p> <p>Format: 8-bit unsigned integer</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>height value not derived from IRS-P5 Cartosat-1 stereo pairs</td> </tr> <tr> <td>1-n</td> <td>height value derived from 1 or more overlapping IRS-P5 Cartosat-1 stereo pairs</td> </tr> <tr> <td>255</td> <td>NoData</td> </tr> </tbody> </table>	Value	Description	0	height value not derived from IRS-P5 Cartosat-1 stereo pairs	1-n	height value derived from 1 or more overlapping IRS-P5 Cartosat-1 stereo pairs	255	NoData								
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<p>_ortho.tif</p> 	<p>The ortho layer contains TOA reflectances of the near-nadir image, orthorectified with the unedited DSM.</p> <p>Format: 16-bit unsigned integer</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>NoData</td> </tr> <tr> <td>1-n</td> <td>TOA reflectance value scaled with factor 10,000</td> </tr> </tbody> </table>	Value	Description	0	NoData	1-n	TOA reflectance value scaled with factor 10,000										
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<p>_qc.tif</p> 	<p>The quality layer is set to 1 for each height value which was derived from IRS-P5 Cartosat-1 data and was rated by the quality control procedures of the production process to meet or exceed the quality described in the product specifications above.</p> <p>Format: 8-bit unsigned integer</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>may not meet the quality described in the product specifications</td> </tr> <tr> <td>1</td> <td>meets or exceeds the quality described in the product specifications</td> </tr> <tr> <td>255</td> <td>NoData</td> </tr> </tbody> </table>	Value	Description	0	may not meet the quality described in the product specifications	1	meets or exceeds the quality described in the product specifications	255	NoData								
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<p>_src.tif</p> 	<p>The source layer contains information on the source of each pixel.</p> <p>Format: 8-bit unsigned integer</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>NoData</td> </tr> <tr> <td>1</td> <td>derived from IRS-P5 Cartosat-1 stereo data</td> </tr> <tr> <td>2</td> <td>filled with SRTM</td> </tr> <tr> <td>3-9</td> <td>reserved for other fill-DSMs</td> </tr> <tr> <td>10</td> <td>edited manually and derived from surrounding values</td> </tr> <tr> <td>11</td> <td>detected as water body and edited accordingly</td> </tr> <tr> <td>12-255</td> <td>reserved for future use</td> </tr> </tbody> </table>	Value	Description	0	NoData	1	derived from IRS-P5 Cartosat-1 stereo data	2	filled with SRTM	3-9	reserved for other fill-DSMs	10	edited manually and derived from surrounding values	11	detected as water body and edited accordingly	12-255	reserved for future use
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