

# PRODUCT DESCRIPTION

**Rome city (Italy)**

**3D City model 1m resolution**  
**Data sample**

## GENERAL INFORMATION

### Coverage

This geographic product covers 11 sq. km of Rome city (Italy).

The geographic coordinates of the red bounding rectangle (reference ellipsoid WGS 84) are the following:

E 12,45756132°	E 12,50173620°
N 41,90348070°	N 41,90348070°



E 12,45756132°	E 12,50173620°
N 41,87559924°	N 41,87559924°

### Data presented in Atoll format.

Package content in Atoll includes:

- Digital Terrain Model (DTM) (data contains in the **Height** folder);
- Land Use Map (Clutter Model) (data contains in the **Clutter** folder);
- Obstacle Heights (Clutter Height Model) (data contains in the **Clutter\_Height** folder);
- 3D buildings + 3D vegetation polygons + Linear vector basic layers (roads, water, coastline) (data contains in the **Vector** folder);
- Text labels (data contains in the **Text** folder)

**Language:** English

**Resolution (cell size):** 1m

## CARTOGRAPHIC REFERENCE

**Data are given in geographic coordinates on ellipsoid WGS 84 with the following references:**

### Ellipsoid

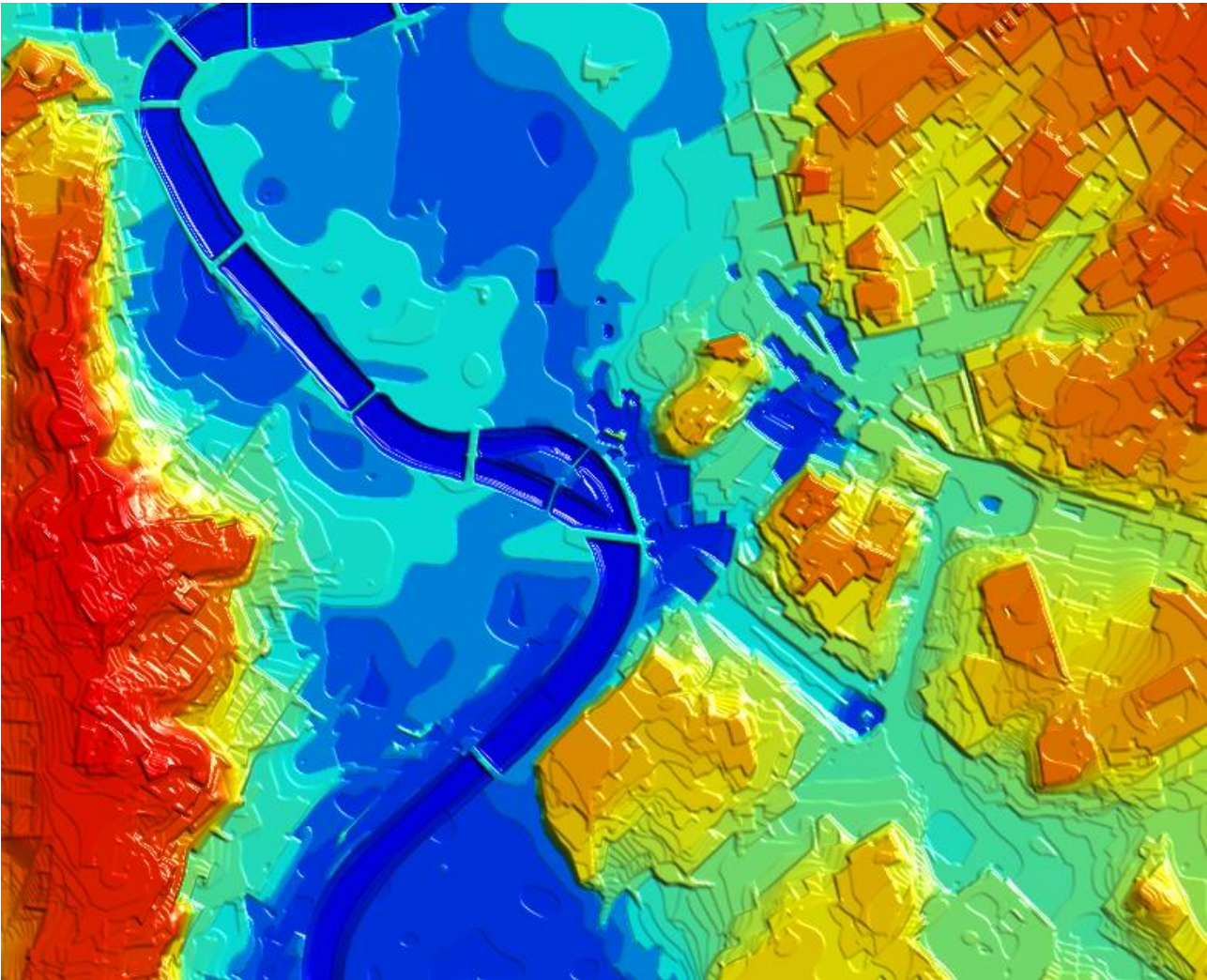
- |                 |                  |
|-----------------|------------------|
| - Name:         | WGS 84           |
| - Big axis:     | 6378137.0 meters |
| - Eccentricity: | 0.081819191      |

### Projection

- |                  |                 |
|------------------|-----------------|
| - Type:          | UTM 32N         |
| - Azimuth angle: | 0.0 degrees     |
| - Longitude 0:   | 15.0 degrees    |
| - Latitude 0:    | 0.0 degrees     |
| - X axis 0:      | 500000.0 meters |
| - Y axis 0:      | 0.0 meters      |
| - Scale factor:  | 0.9996          |

DIGITAL TERRAIN MODEL

General view



Meanings of pixel values

Each image pixel stores the value of terrain elevation.

The value of elevation above sea level:

- Height = 0 meters - 0
- Unknown values - - 9999
- Z values unit - meters

Parameters of accuracy	Value
Resolution (cell size)	1 m
Absolute Planimetric accuracy (x, y)	3 m CE95
Absolute Altimetric accuracy (z)	3 m LE95

Sources:
WorldView 01 stereopairs of satellite images with 0,5 m resolution. Vintage 07.2024

LAND USE MAP (CLUTTER MODEL)

General view



Parameters of accuracy	Value	Class Id	Class	Color
Resolution (cell size)	1 m	1	open_area	
Absolute Planimetric accuracy (x, y)	3 m CE95	2	forest	
Minimal Mapping Unit for buildings and vegetation	16 sq.m	3	sea	
<b>Sources:</b>		4	inland_water	
		5	residential	
WorldView 01 satellite images with 0,5 m resolution. Vintage 07.2024		6	urban	
		7	dense_urban	
		8	blocks_of_buildings	
		9	industrial_and_commercial	
		10	villages	
		11	open_areas_in_urban	
		12	parks_in_urban	
		13	airport	
		14	wetland	
		15	dense_residential	
		16	dense_urban_high	
		17	urban_low	
		18	dense_urban_low	
		19	buildings	
		20	semiopen_area	
		21	grass	
		22	agricultural	
		23	sand_stone	



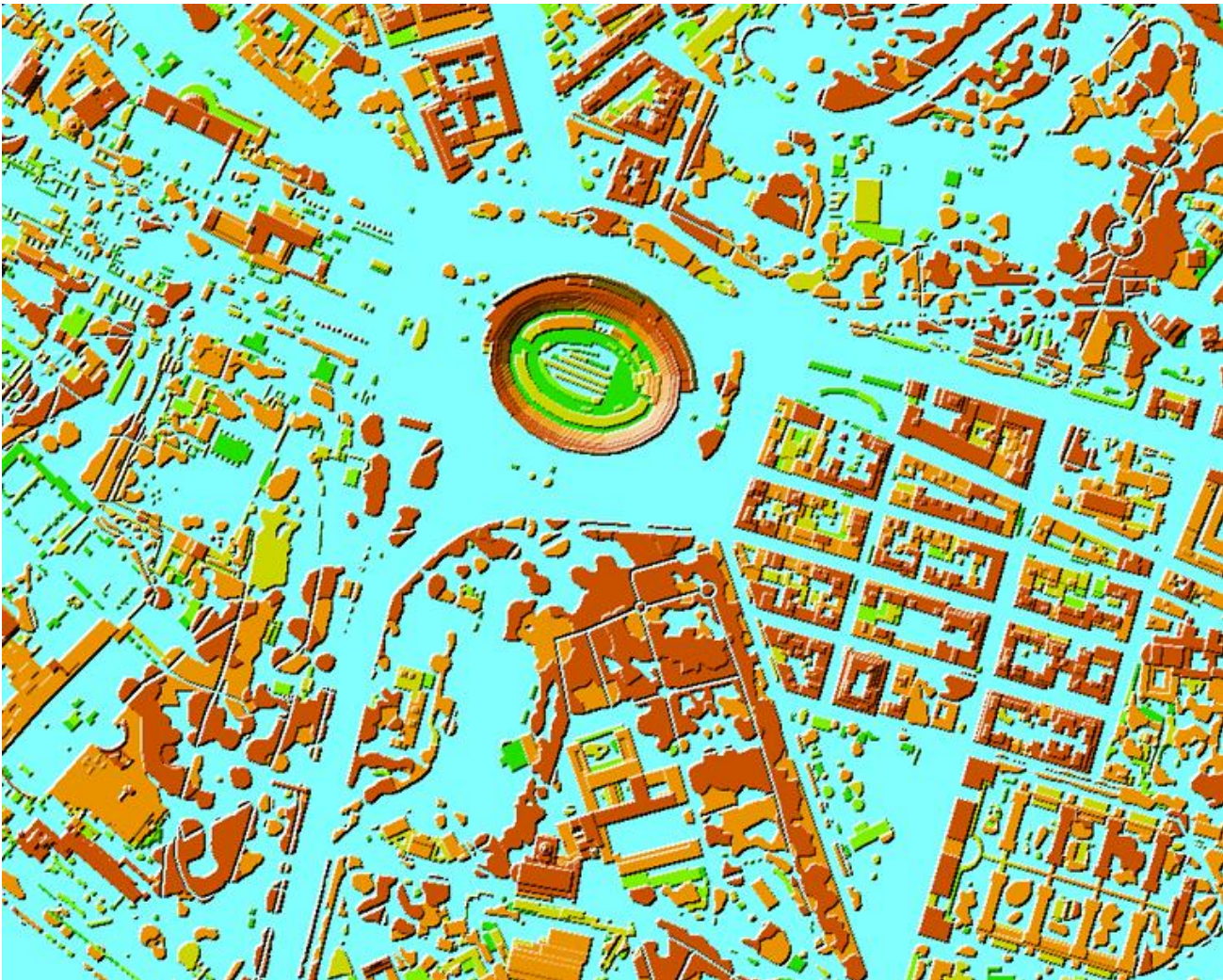
## Meanings of pixel values

The values that are stored with each pixel of the image correspond to the code that represents land type (clutter class). The table of correspondences between codes and clutter class names (23 clutter classes) is presented below:

Code	Class Name	Class Description
1	Open area	Open areas outside of cities
2	Forest	Forested lands with closed tree canopy. No distinction is made between deciduous and coniferous
3	Sea	Sea and ocean
4	Inland Water	Lakes, rivers or channels
5	Residential	Houses in suburban environment. Suburban density typically involves laid out street patterns in which streets are visible. Individual houses are frequently visible. Average height is below 15m.
6	Urban	Mean urban building, more than 3 store height
7	Dense Urban	Dense urban building, more than 3 store height
8	Blocks of buildings	Groups of buildings, either parallel or not, that may be separated by large green space. Average height is up to 30 meters.
9	Industrial And Commercial	Areas including buildings with large footprints separated by streets (factories, shopping malls, storehouses etc.)
10	Villages	Small built-up area in rural surrounding
11	Open In urban	Open spaces inside the town: vacant lots, squares
12	Parks in urban	Any vegetation land in urban environment. Golf courses, municipal parks, extensive cemeteries or recreational lands
13	Airport	Territory of airport
14	Wetland	Wetland
15	Dense Residential	Groups of houses or collective residential buildings in suburban environment. Suburban density typically involves laid out street patterns in which streets are visible. There is no open space between constructions. Average height is below 15m
16	Dense urban high	Areas within urban perimeter. This includes dense urban areas with dense development where built-up features do not appear distinct from each other. It also includes built-up features of the downtown district with heights more than 15m.
17	Urban low	Areas within urban perimeter. The mean urban should have mean street density with no pattern, the major streets are visible, the built-up features appear distinct from each other. Some small vegetation could be included. Average height is below 15m
18	Dense urban low	Areas within urban perimeter. This includes dense urban areas with dense development where built-up features do not appear distinct from each other. It also includes built-up features of the downtown district with heights below 15m.
19	Buildings	Isolated cluster of high towers or skyscrapers higher than 40m
20	Semiopen area	Areas covered by low scrub vegetation
21	Grass	Grassland
22	Agricultural	Agricultural lands
23	Sand stone	Areas covered by sands, stonelands

**OBSTACLES HEIGHTS MODEL (MATRIX)**

**Partial view**



**Obstacles Heights Model includes – buildings and vegetated areas.**

Parameters of accuracy	Value
Resolution (cell size)	1 m
Absolute Planimetric accuracy (x, y)	3 m CE95
Accuracy of Buildings Heights (bh)	3 m LE95
Accuracy of Vegetation Heights (vh)	3m LE95
Minimal Mapping Unit for Buildings	16 sq.m
Minimal Recognizable Building Height	3 m
Minimal Mapping Unit for Vegetation	16 sq.m

Sources:
WorldView 01 stereopairs of satellite images with 0,5 m resolution. Vintage 07.2024

**VECTOR LAYERS**

**Partial view**



Parameters of accuracy	Value
Absolute Planimetric accuracy (x, y)	3 m CE95
Accuracy of Buildings Heights (bh)	3 m LE95
Accuracy of Vegetation Heights (vh)	3m LE95
Minimal Mapping Unit for Buildings and Vegetation	16 sq.m
Minimal Recognizable Building Height	4 m

Sources:
WorldView 01 satellite images with 0,5 m resolution. Vintage 07.2024

**There are 10 vector classes in 3D Dataset:**

<b>Nº</b>	<b>Class Name</b>	<b>Class Description</b>
1	Highways	International motor roads
2	Major roads	Regional motor roads
3	Streets	Town street axial lines
4	Secondary roads	Other roads
5	Inland water	Coastline of rivers and lakes. Rivers with less than 10 m width
6	Railways	Railways
7	Railways in tunnels	Railways in tunnels
8	Roads in tunnels	Roads in tunnels
9	<b>Vegetation</b>	<b>Vegetation polygons with heights</b>
10	<b>Buildings</b>	<b>Building footprints with heights</b>