



## **PRODUCT DESCRIPTION**

**San Pedro Sula city (Honduras)**

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

## GENERAL INFORMATION

### Coverage

This geographic product covers 5 sq. km of San Pedro Sula city (Honduras).

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

W 88,04650392°	W 88,02404784°
N 15,51148407°	N 15,51148407°



W 88,04650392°	W 88,02404784°
N 15,48593505°	N 15,48593505°

### 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);
- Orthoimage (data contains in the **Orthoimage** folder)

**Language:** English

**Resolution (cell size):** 5m

## CARTOGRAPHIC REFERENCE

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

### Ellipsoid

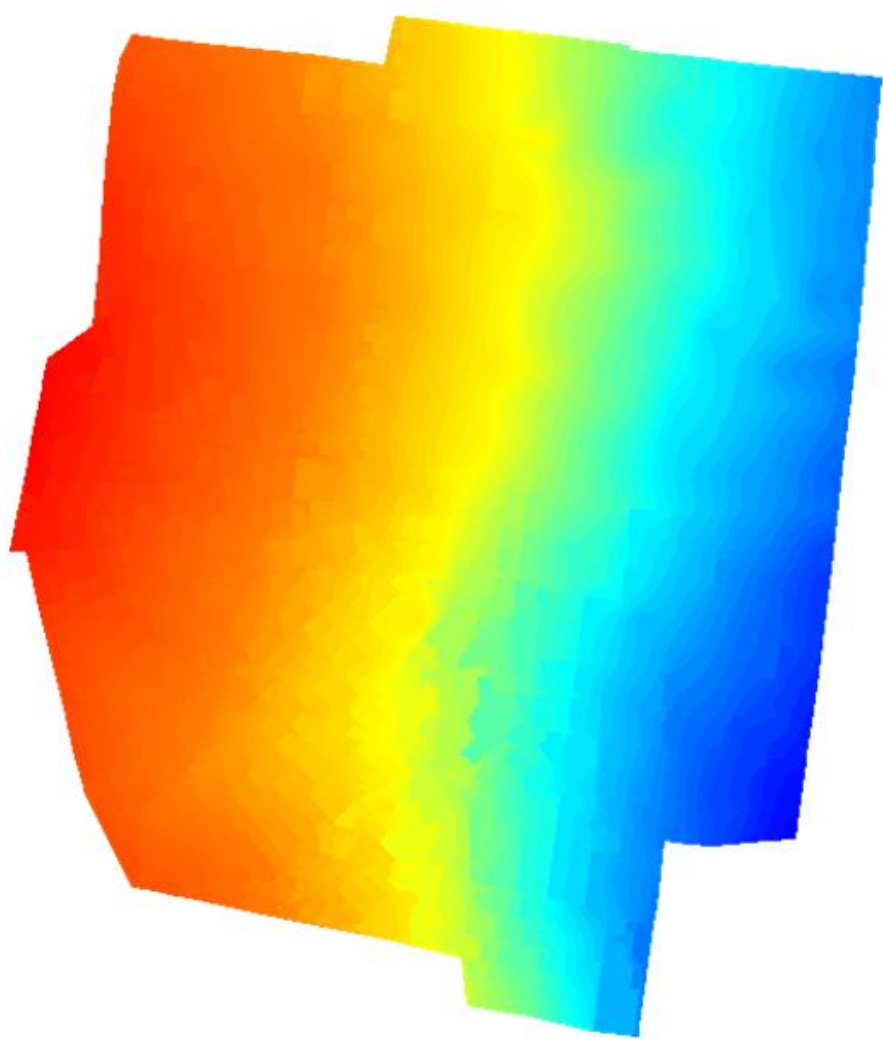
- Name: WGS 84
- Big axis: 6378137.0 meters
- Eccentricity: 0.081819191

### Projection

- Type: UTM 16N
- Azimuth angle: 0.0 degrees
- Longitude 0: -87.0 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:

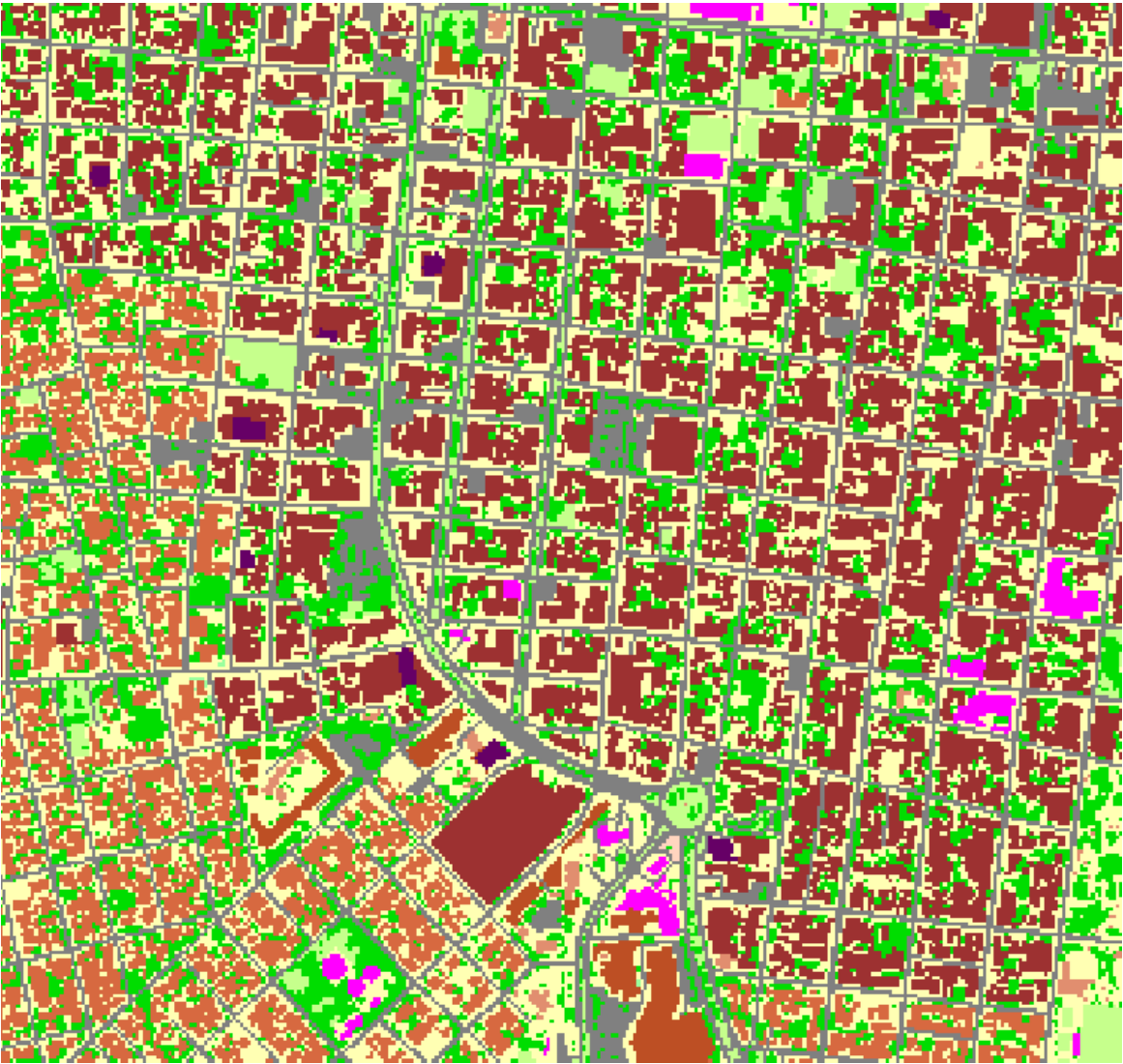
- Height = 0 meters - 0
- Unknown values - - 9999
- Z values unit - meters

Parameters of accuracy	Value
Resolution (cell size)	5 m
Absolute Planimetric accuracy (x, y)	± 4 m CE95
Absolute Altimetric accuracy (z)	± 4 m LE95

Sources:
Pleiades 2A (Airbus) stereopairs of satellite images with 0,5 m resolution. Vintage 11.2024

LAND USE MAP (CLUTTER MODEL)

General view



Parameters of accuracy	Value
Resolution (cell size)	5 m
Absolute Planimetric accuracy (x, y)	± 4 m CE95
Minimal Mapping Unit for buildings and vegetation	25 sq.m

Sources:
Pleiades 2A (Airbus) satellite images with 0,5 m resolution. Vintage 11.2024

Class Id	Class	Color
1	open_area	
2	forest	
3	sea	
4	inland_water	
5	residential	
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	

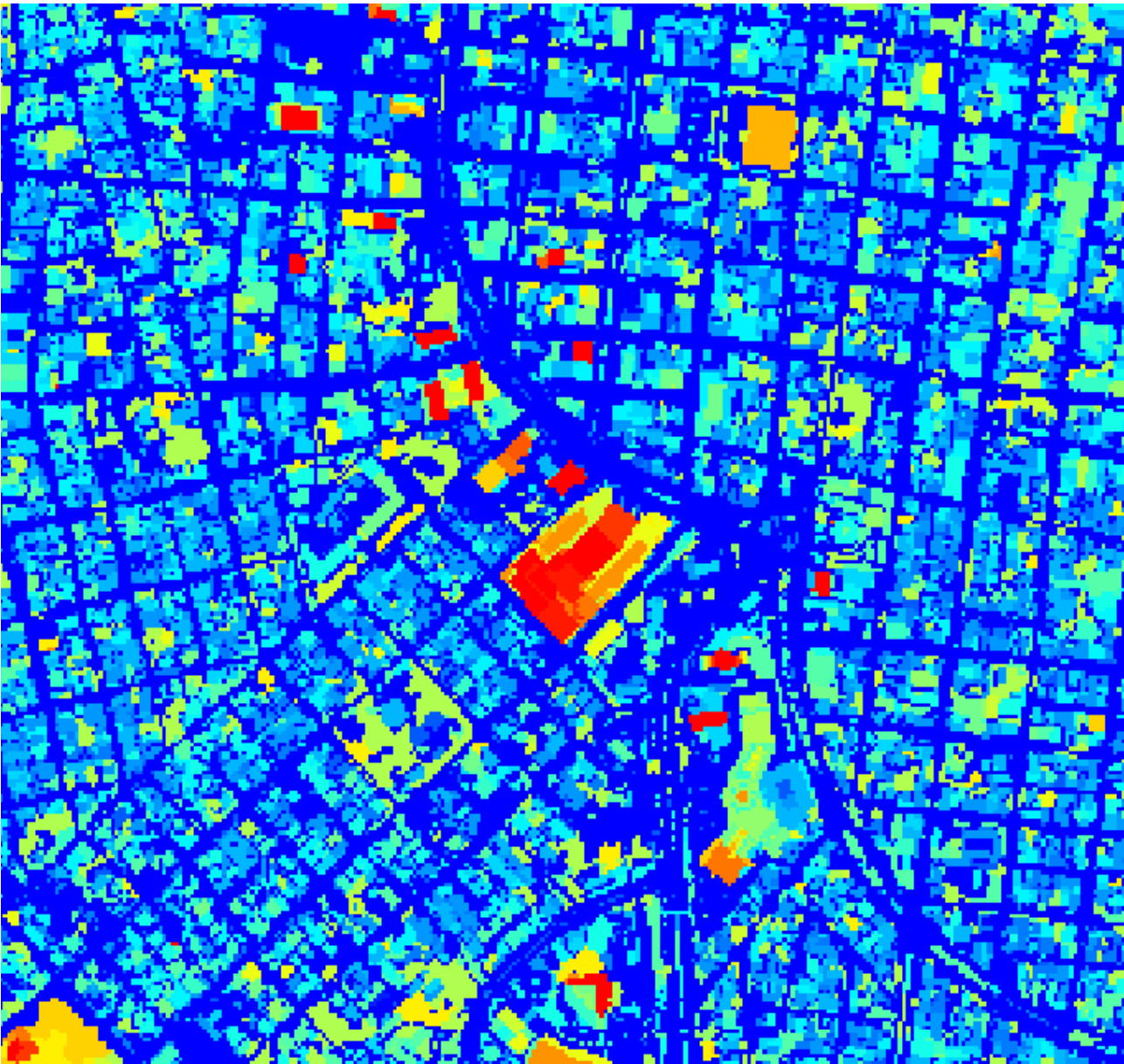
## Meanings of pixel values

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.**

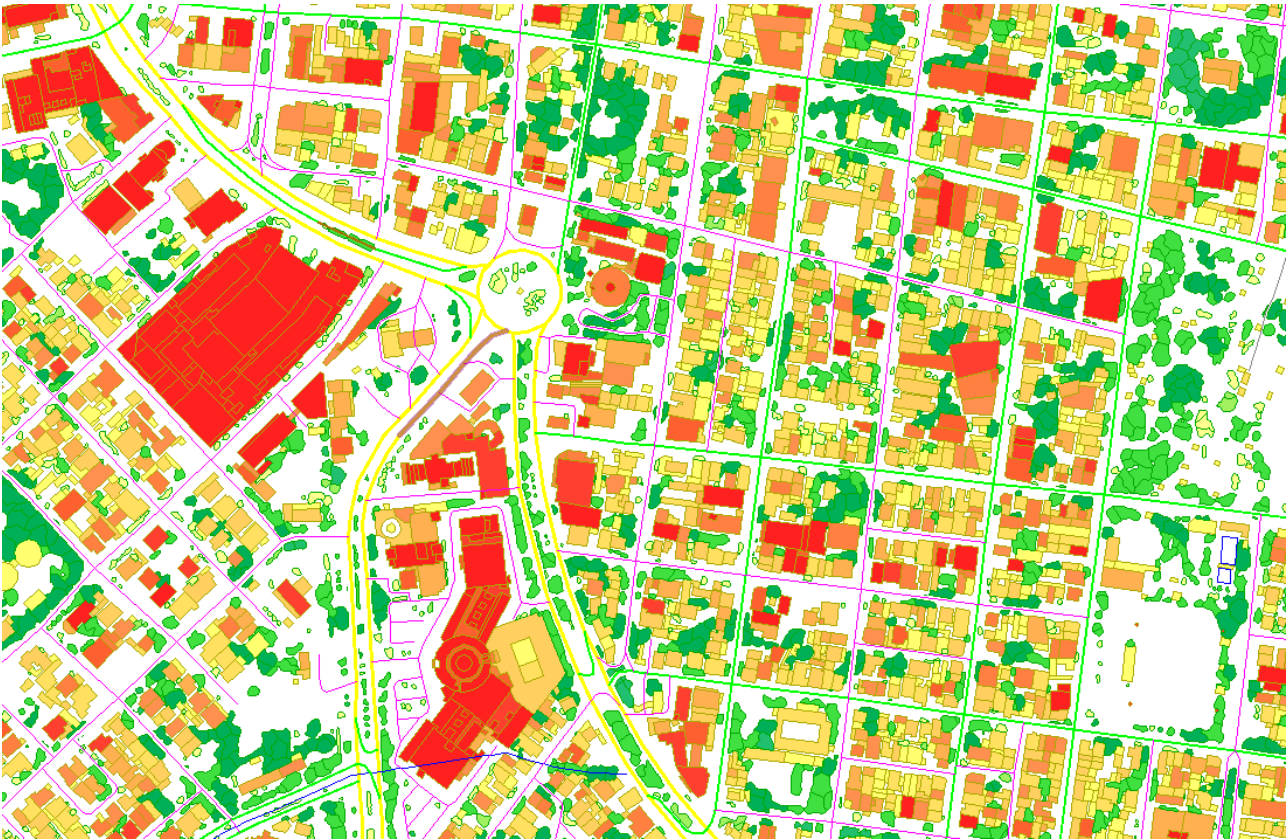
Parameters of accuracy	Value
Resolution (cell size)	5 m
Absolute Planimetric accuracy (x, y)	± 4 m CE95
Accuracy of Buildings Heights (bh)	± 4 m LE95
Accuracy of Vegetation Heights (vh)	± 5 m LE90
Minimal Mapping Unit for Buildings	5m (Height differences greater than 5m in the same building)
Minimal Recognizable Building Height	5 m
Minimal Mapping Unit for Vegetation	25 sq.m

Sources:
Pleiades 2A (Airbus) stereopairs of satellite images with 0,5 m resolution. Vintage 11.2024



VECTOR LAYERS

Partial view



Parameters of accuracy	Value
Absolute Planimetric accuracy (x, y)	± 4 m CE95
Accuracy of Buildings Heights (bh)	± 4 m LE95
Accuracy of Vegetation Heights (vh)	± 5 m LE90
Minimal Mapping Unit for Buildings and Vegetation	25 sq.m
Minimal Recognizable Building Height	5 m

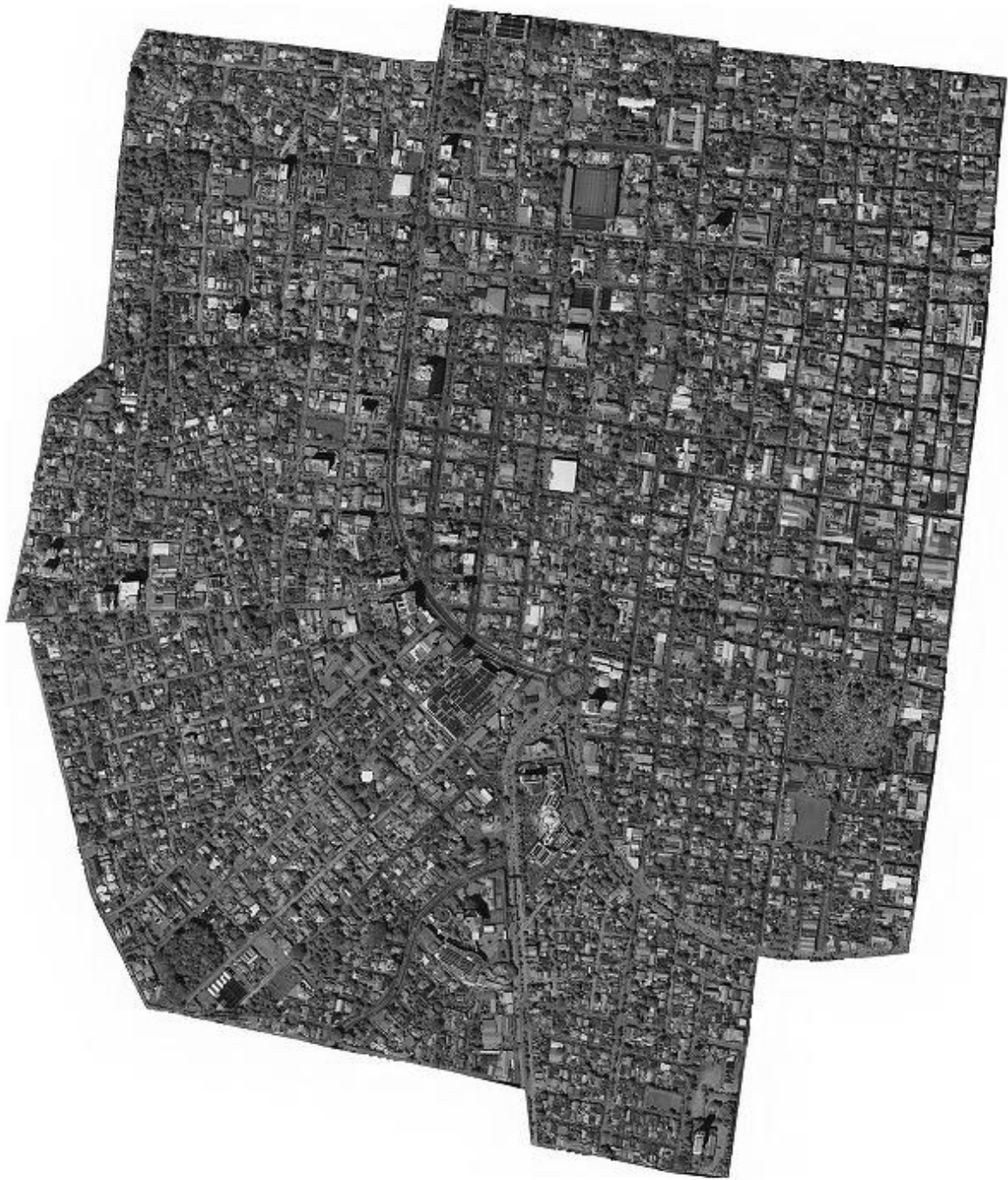
Sources:
Pleiades 2A (Airbus) satellite images with 0,5 m resolution. Vintage 11.2024

There are 8 vector classes in 3D Dataset:

Nº	Class Name	Class Description
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	Roads in tunnels	Roads in tunnels
7	<b>Vegetation</b>	<b>Vegetation polygons with heights</b>
8	<b>Buildings</b>	<b>Building footprints with heights</b>

**ORTHOIMAGE**

**General view**



Parameters of accuracy	Value
Orthoimage resolution	0,5m
Panchromatic level	Panchromatic
Absolute Planimetric accuracy (x, y)	± 4 m CE95
Satellite image Sensor	Pleiades 2A (Airbus, France)
Data image	11.2024