

## **PRODUCT DESCRIPTION**

### **Puntas Arenas (Chile)**

#### **2D City model**

#### **How to contact us:**

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## GENERAL INFORMATION

### Coverage

This geographic product covers 5 sq. km of Puntas Arenas 2D model (Chile).

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

W 70,933643°  
S 53,148647°

W 70,901303°  
S 53,148647°



W 70,933643°  
S 53,169138°

W 70,901303°  
S 53,169138°

### Data presented Atoll format.

The delivered package includes:

- Digital Terrain Model (DTM) (data contains in the **Height** folder);
- Land Use Map (Clutter Model) (data contains in the **Clutter** folder);
- Linear vector basic layers (roads, water, coastline (data contains in the **Vector** folder);
- Orthoimage (data contains in the **Orhoimage** folder)

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

**Language** English

## Cartographic reference

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

### Ellipsoid

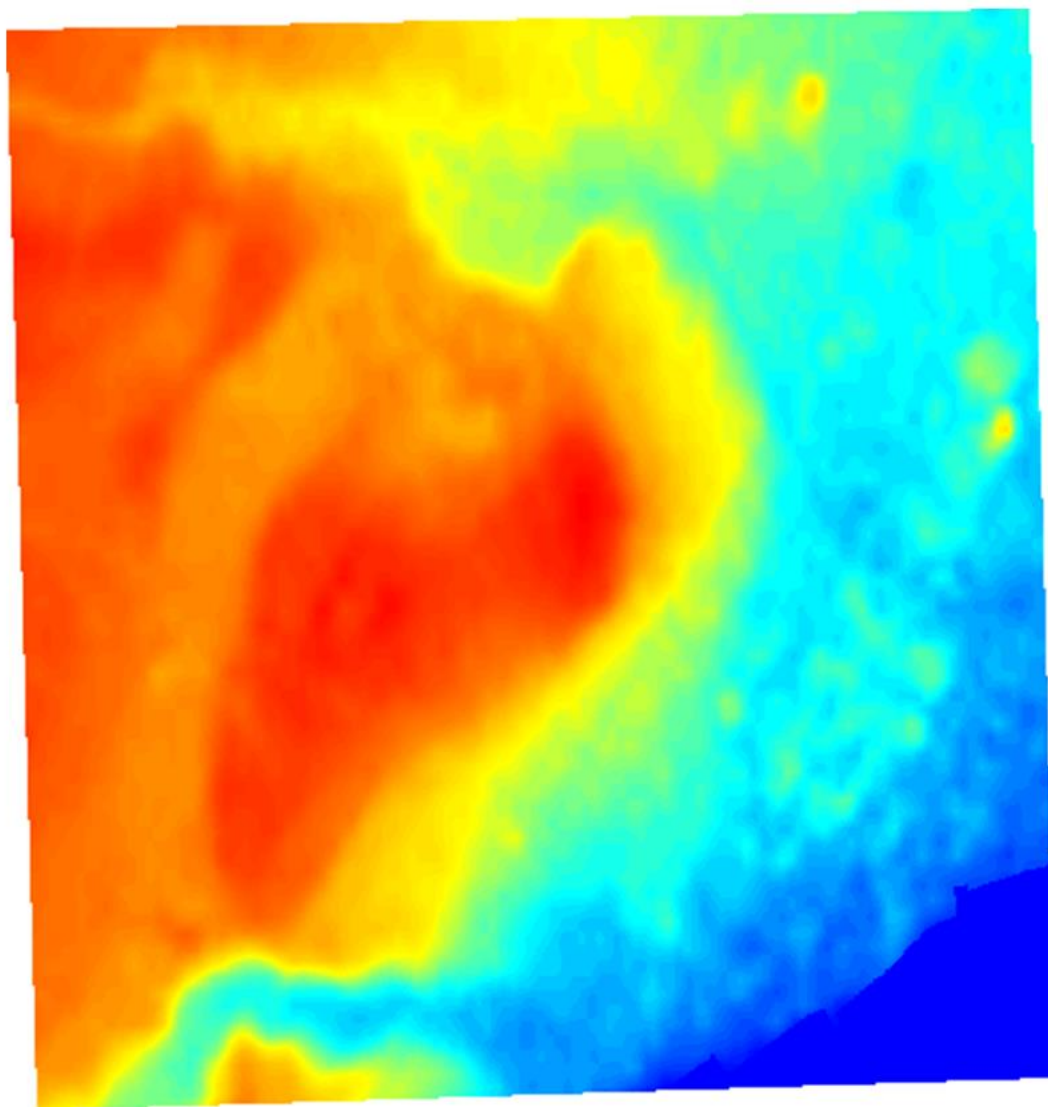
- Name: WGS 84
- Big axis: 6378137.0 meters
- Eccentricity: 0.081819191

### Projection

- Type : UTM 19S
- Azimuth angle : 0.0 degrees
- Longitude 0 : -69.00 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

Values of heights submitted in the Baltic system of heights.

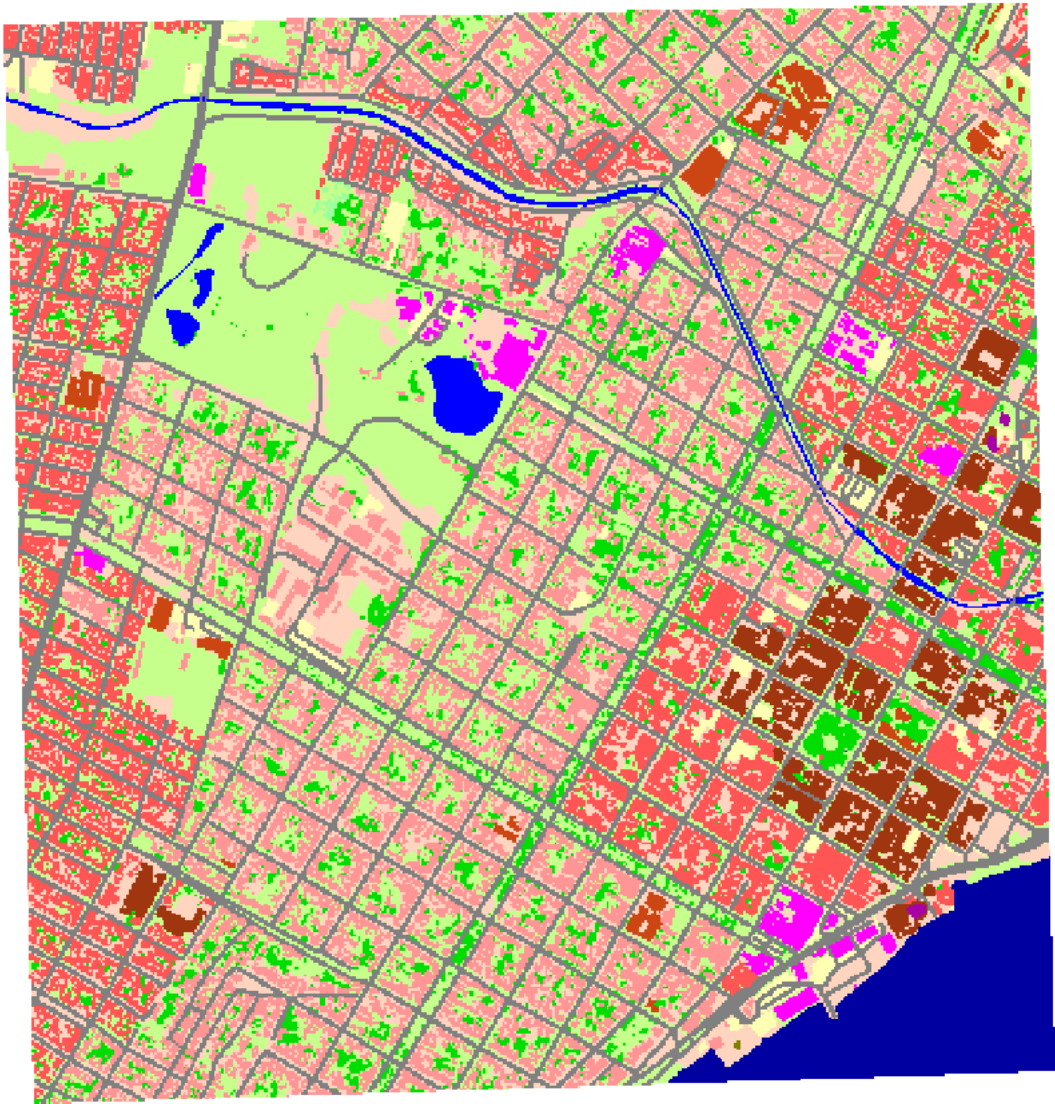
Parameters of accuracy	
Resolution (cell size)	5 m
Absolute Planimetric accuracy (x,y)	5 m CE90
Absolute Altimetric accuracy (z)	8 m LE90

Sources
Re-Engineered SRTM+ALOS DEM data for DTM

LAND USE MAP (CLUTTER MODEL)

General view



Parameters of accuracy	
Resolution (cell size)	5 m
Absolute Planimetric accuracy (x,y)	5 m CE90
Minimum mapping unit for clutter	50 sq.m

Sources
Mono satellite images with 1-2 m resolution. Vintage: 2023

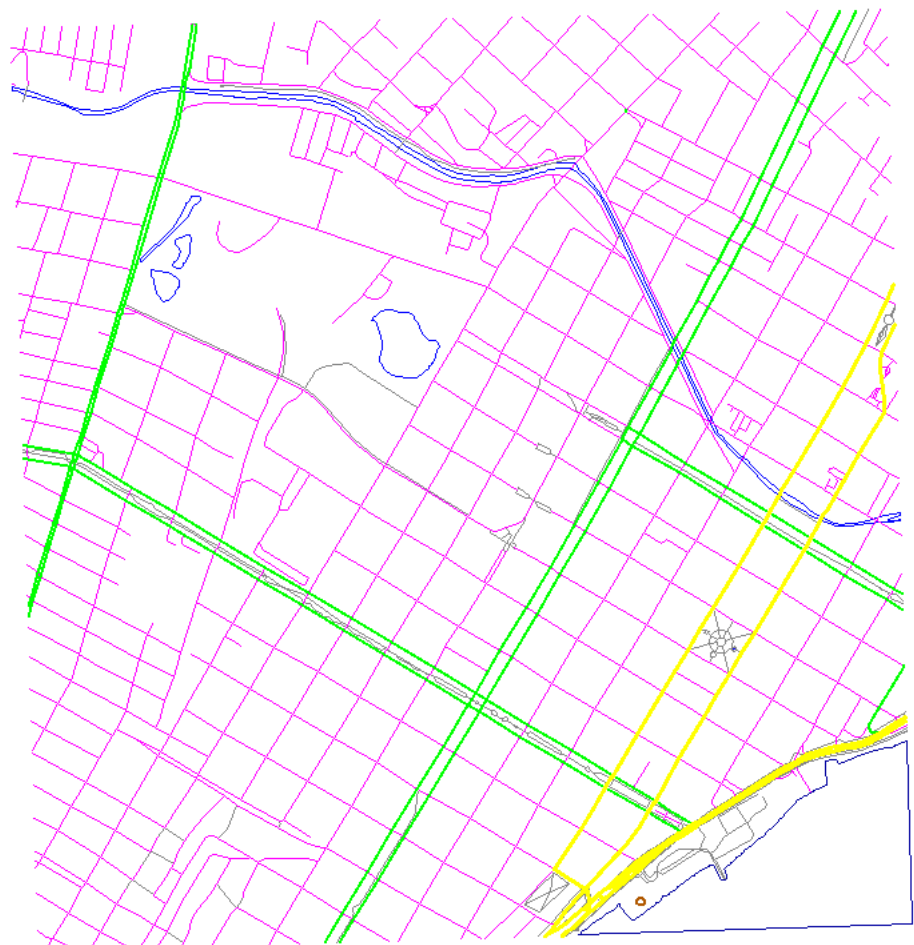
### Meanings of pixel values

The value which is stored with each pixel of image corresponds to the code that represents land type (clutter class). The table of correspondences between codes and clutter class names (23 clutter classes in all) is presented below.

Code (ID)	Clutter Class name	Class Description
1.	Open	Open areas outside 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.	Suburban	Houses in suburban environment. Suburban density typically involves laid out street patterns in which streets are visible. Lots may be as small as 30m by 30m, but are typically larger and include vegetation cover with less density. Individual houses are frequently visible. Average height is below 15m
6.	Urban	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 40m
7.	Dense Urban	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 40m.
8.	Buildings Blocks	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	Small open land area with no vegetation surrounded by mean urban, dense urban or residential
12.	Woodland	Sparse forest with less density and scattered trees
13.	Airport	Territory of airport
14.	Wetland	Swampland
15.	Dense Residential	Groups of houses or collectives 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.	Rangeland	Areas with low scrub vegetation (bush, grass)
17.	Grass	Grassland
18.	High Buildings	Isolated cluster of high towers or skyscrapers higher than 40m
19.	Barren	Waste stony lands
20.	Dense urban high	Financial District. Heights are over 40 meters
21.	Urban hight	Areas within urban perimeter. The major streets are visible, the built-up features appear distinct from each other. Some small vegetation could be included. Average buildings height is >25m
22.	Urban low	Mean urban building, 1-3 store height
23.	Dense urban low	Dense urban building, 1-3 store height

**VECTOR LAYERS**

**General view**



Parameters of accuracy	Value
Absolute Planimetric accuracy (x, y)	5 m CE90



**ORTHOIMAGE**

**General view**



Parameters of accuracy	Value
Orthoimage resolution	1m
Sensor type/ Satellite image provider	WV-02 / Maxar
Image vintage	2023
Chromatic level	Multicolor
Planimetric accuracy	5 m CE90