

# Aerial Imagery

## Overview

Aerial or Overhead Imageries are a major source for OSM users to trace road, buildings, and natural features for Openstreetmap.

The data for overhead imageries are sourced from different methods such as satellites and airplanes.

Due to the nature of the images being acquired from a vertical height there are some issues that users have to contend with such as cloud cover and different viewing angles.

## Common issues: Cloud cover



Imagery location: San Juan, Batangas, Philippines. (13.67029875, 121.4137852)



## Common issues: Cloud cover





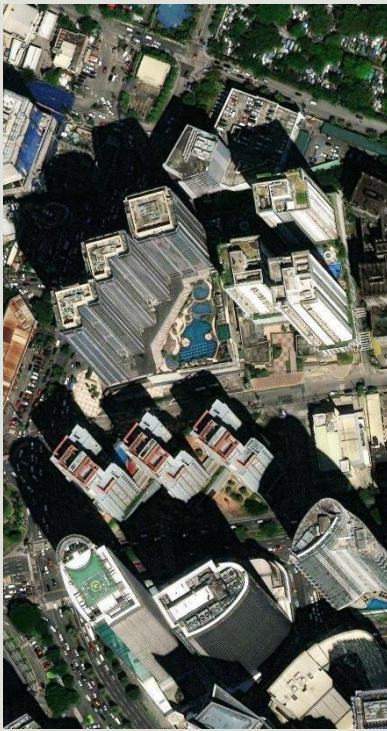
# Common issues: Viewing angles



Bing Imagery



Mapbox Imagery



ESRI Imagery

Imagery location: Makati City, Philippines. (14.56208405, 121.01831225000001)

# Background



## Backgrounds

- Bing Maps Aerial
- Esri World Imagery
- Esri World Imagery (Clarity) Beta
- Mapbox Satellite
- OpenAerialMap Mosaic, by Kontur.io
- OpenStreetMap (Standard)
- OpenTopoMap
- Pangasinán/Bulacan (Philippines HiRes)
- None
- Custom

- Show Minimap
- Show Background Panel
- Show Location Panel

[Report an Imagery Problem](#)



iD Background Imagery

### Imagery

Modify list of imagery layers displayed in the Imagery menu

Imagery providers   Settings   Offset bookmarks   Cache

Available default entries:

Menu Name (Default)	Imagery URL (Default)
Bing aerial imagery	bing[1,22]:https://www.bing.com/maps/
EOx cloudless Sentinel-2 2018	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2018_3...
EOx cloudless Sentinel-2 2019	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2019_3...
EOx cloudless Sentinel-2 2020	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2020_3...
EOx cloudless Sentinel-2 2021	wmts[18]:https://s2maps-tiles.eu/wmts?style=default&Service...
Esri World Imagery	tms[22]:https://(switch:services.server).arcgisonline.com/arcgis...
Esri World Imagery (Clarity) Beta	tms[22]:https://clarity.maptiles.arcgis.com/arcgis/rest/services...
Landsat	wmts[12]:https://gibs.earthdata.nasa.gov/wmts/epsg3857/best...
Mapbox Satellite	tms[22]:https://(switch:a,b,c,d).tiles.mapbox.com/v4/mapbox.sa...
Maxar Premium Imagery	tms[22]:https://services.digitalglobe.com/earthservice/tmsacce...
OpenAerialMap Mosaic by Kontur.io	tms[24]:https://apps.kontur.io/raster-tiler/oam/mosaic/{zoom}..
TomTom RoadRunner	tms[22]:https://roadrunner.innovation.tomtom-qlobal.com/styl...

New default entries can be added in the [Wiki](#).

Boundaries of selected imagery entries:

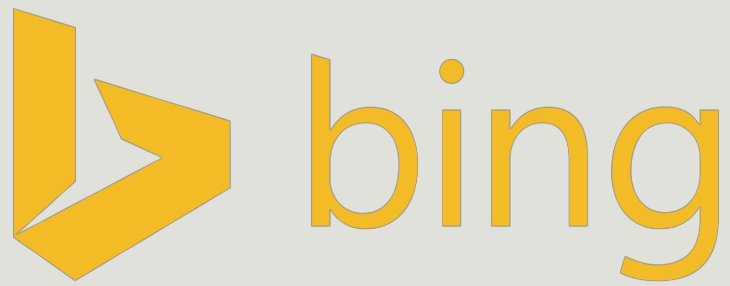
Selected entries:

Menu Name	Imagery URL
1	wmts:https://tiles.openaerialmap.org/5ebaa03e80832d00073367ad/0/5ebaa03e80832d00073367b1/wmts
Bing aerial imagery	bing[1,22]:https://www.bing.com/maps/
EOx cloudless Sentinel-2 2018	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2018_3857&STYLES=&FORMAT=image/jpeg&SRS={proj}&WIDTH={width}&HEIGHT={height}
EOx cloudless Sentinel-2 2019	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2019_3857&STYLES=&FORMAT=image/jpeg&SRS={proj}&WIDTH={width}&HEIGHT={height}
EOx cloudless Sentinel-2 2020	wms[18]:https://tiles.maps.eox.at?LAYERS=s2cloudless-2020_3857&STYLES=&FORMAT=image/jpeg&SRS={proj}&WIDTH={width}&HEIGHT={height}
EOx cloudless Sentinel-2 2021	wmts[18]:https://s2maps-tiles.eu/wmts?style=default&Service=WMTS&Request=GetCapabilities
ESRI Wayback 2014	tms:https://wayback.maptiles.arcgis.com/arcgis/rest/services/world_imagery/wmts/1.0.0/default028mm/mapserver/tile/4230/{zoom}/{y}/{x}
ESRI Wayback 2019	tms:https://wayback.maptiles.arcgis.com/arcgis/rest/services/world_imagery/wmts/1.0.0/default028mm/mapserver/tile/18691/{zoom}/{y}/{x}
Esri World Imagery	tms[22]:https://(switch:services.server).arcgisonline.com/arcgis/rest/services/World_Imagery/MapServer/tile/{zoom}/{y}/{x}
Esri World Imagery (Clarity) Beta	tms[22]:https://clarity.maptiles.arcgis.com/arcgis/rest/services/World_Imagery/MapServer/tile/{zoom}/{y}/{x}

Activate

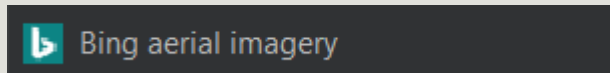
OK   Cancel   Help

JOSM Background Imagery



Bing Maps is the cartographic platform operated by Bing under Microsoft. Its satellite imagery is taken from multiple sources such as Maxar and CNES/Airbus.

Bing imagery is normally older compared to ESRI and Mapbox but it would still depend on the area of coverage.



Another service provided by Bing is Streetside which is Bing's 360-degree street-level imagery which can be accessed via Bing Maps (<https://www.bing.com/maps>).



# Bing Maps Streetside

Microsoft Bing

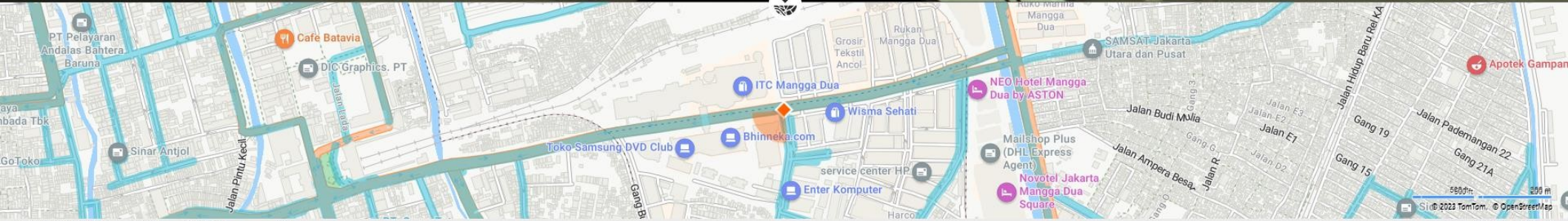


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Jalan Mangga Dua Dalam 4, Jakarta,  
Central Jakarta, Jakarta 10730, Indonesia



Feedback


Report a privacy concern with this image







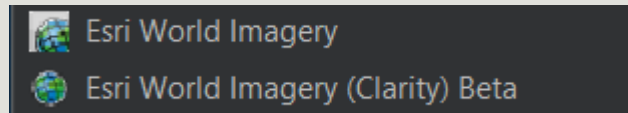
Mapbox is a commercial mapping service that is also a major contributor to OSM. Imagery comes from different sources so there may be some overlap of in certain areas.

 Mapbox Satellite



ESRI (Environmental Systems Research Institute) is a major provider of imagery for mapping and also the developer of ArcGIS. In OSM, they provide two imagery sources that can be used: ESRI World Imagery and ESRI World Imagery Clarity.

ESRI World Imagery is generally more recent compared to ESRI World Imagery Clarity.



World Imagery Wayback (<https://livingatlas.arcgis.com/wayback/>) is a digital archive of the different releases of ESRI World Imagery over time. While latest imagery is the preferred imagery to be used for mapping, artifacts and issues during the capture may pose problems during the editing process.

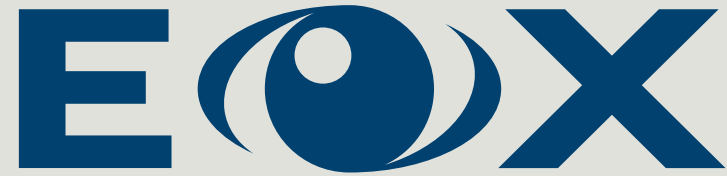
The screenshot displays the World Imagery Wayback interface. On the left, a sidebar contains the following elements:

- World Imagery Wayback title
- Coordinates: 14.55504865, 121.02450
- Timeline graph showing imagery captures from 2016 to 2022.
- Wayback 2023-04-05
- Click map for imagery details
- Only versions with local changes (checked)
- Version history table:

Version	Thumbnail	Refresh
2022-06-08		
2020-10-14		
2019-12-12		
2018-03-14		
2017-04-19		
2017-02-27		
2014-03-26		
2014-02-20		

The main map area shows a satellite view of San Lorenzo, Manila, with various streets and landmarks labeled. A 'reference label overlay' checkbox is visible in the top right corner of the map area.





EOXCloudless are pre-processed images from the Sentinel-2 satellites to be as cloudless as possible. The processing is done by geospatial engineering company EOX IT services. The major limitation for EOXCloudless is that zoom levels are limited, good for identifying new road developments but there would be difficulty in identifying features in an urban area.

- EOx cloudless Sentinel-2 2018
- EOx cloudless Sentinel-2 2019
- EOx cloudless Sentinel-2 2020
- EOx cloudless Sentinel-2 2021
- EOx cloudless Sentinel-2 2022



EOX 2020

Sentinel-2 cloudless - <http://2maps.eu> by EOX.IT Services GmbH (Contains modified Copernicus Sentinel data 2020)

Imagery location: Tagkawayan, Quezon, Philippines. (14.0059638, 122.52291220000001)



Imagery location: Tagkawayan, Quezon, Philippines. (14.0059638, 122.52291220000001)





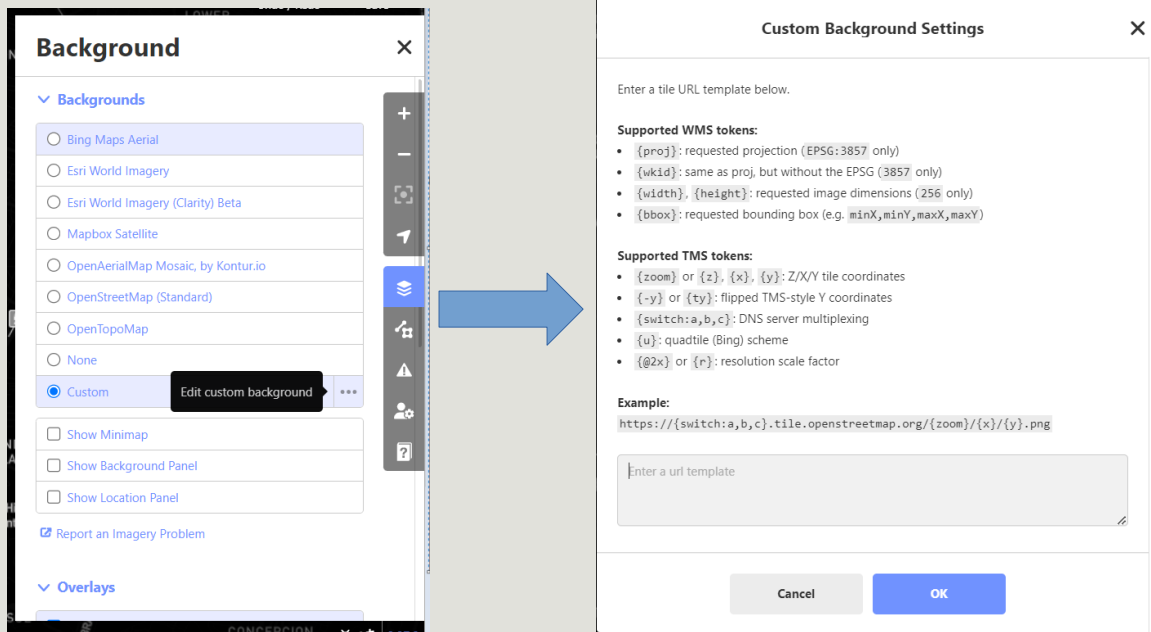
Imagery location: Tagkawayan, Quezon, Philippines. (14.0059638, 122.52291220000001)



Imagery location: Tagkawayan, Quezon, Philippines. (14.0059638, 122.52291220000001)

Using EOX Cloudless Sentinel imagery in iD:

Select the radio button for Custom to input custom imagery URLs:



`https://s2maps-tiles.eu/?FORMAT=image/png&TRANSPARENT=TRUE&VERSION=1.1.1&SERVICE=WMS&REQUEST=GetMap&LAYERS=s2cloudless-<YEAR>_3857&STYLES=&SRS={proj}&WIDTH={width}&HEIGHT={height}&BBOX={bbox}`

Valid <YEAR>: 2018, 2019, 2020, 2021, and 2022.

\*iD is limited to one custom background imagery



Final note:

Always check image alignments.









End of presentation