

# Toolbox.Porto / Asprela+

The City of Porto, through Porto Digital, operates an Urban Platform to handle its Context Data and Dynamic Data. This data represents a digital version of the current state of the city, its digital counterpart. It collects and manages data from sensors, devices, vehicles, and other types in real-time (or quasi-real-time). As part of its efforts to promote the use of Open Data and within the context of the Asprela+ project, the city released its Toolbox.Porto as a portal to its Open Context Data.

This Open Data Platform is running at its core the FIWARE Ecosystem. Powered by an Orion Context Broker as its main component and implements NGSI-LD protocols for communication and data exchange.

All the data stored and managed by the Toolbox follows the SmartDataModels data modeling catalog.

## Access Points and Interface:

Host: <https://toolbox-asprela.porto.digital/>

## Documentation:

You can find the NGSI-LD API Specification used to exchange data with the toolbox in the following [link](#).

To access further documentation please see:

Documentation regarding Orion Context Broker:  
<https://fiware-orion.readthedocs.io/en/master/>

Documentation regarding NGSI-LD:  
<https://ngsi-ld-tutorials.readthedocs.io/en/latest/>

## Data Available:

- PointsOfInterest ([datamodel](#)) - Location and information relative to POIs in Porto;
- Vehicle ([datamodel](#)) - Real-time location of the position of STCP bus and Metro do Porto vehicles, as well as some soft mobility devices (vehicleType bus, metro and twoWheeledVehicle respectively);
- WeatherObserved ([datamodel](#)) - Real-time measurements of the meteorological sensors spread in Porto;
- NoiseLevelObserved ([datamodel](#)) - Real-time measurement of the noise sensors spread in Porto;
- AirQualityObserved ([datamodel](#)) - Real-time measurements of the air quality sensors spread in Porto;
- OnStreetParking ([datamodel](#)) - Location of soft mobility sharing spots and real-time availability of vehicles in each spot;
- Device ([datamodel](#)) - Location and information relative to Sensors and other hardware devices in Porto;
- AccessPoint ([datamodel](#)) - Location and information relative to the AccessPoints of the Porto Free Wi-Fi network;

and others.

## Quick Start API:

We recommend always checking the official API documentation and using a REST API client such as Insomnia or Postman to keep track of queries and make use of params. However, below we leave small hints and direct URL requests to retrieve common requests.

*(GET) Getting all entities:*

<https://toolbox-asprela.porto.digital/ngsi-ld/v1/entities>

<https://toolbox-asprela.porto.digital/ngsi-ld/v1/entities?limit=1000>

Retrieves all stored entities in the Context Broker. By default the limit of the query is 20 results, to increase to the maximum limit add the parameters *limit*.

*(GET) Getting all entities of a certain type:*

<https://toolbox-asprela.porto.digital/ngsi-ld/v1/entities?q=vehicleType==bus>

This complex query uses the ?q to indicate a query with a filter. In this example, it will return all entities to which the attribute vehicleType is of value bus. Again, this returns 20 results, to increase the limit one would add '&limit=1000' to the URL or param limit = 1000.

*(GET) Get a specific entity:*

<https://toolbox-asprela.porto.digital/ngsi-ld/v1/entities/urn:ngsi-ld:PointOfInterest:5cd04b47f979e00001c8342d>

This query retrieves the entity object with id urn:ngsi-ld:PointOfInterest:5cd04b47f979e00001c8342d.

For other queries please check the official documentation:

- [API Walkthrough](#)
- [API Quick Swagger API Docs](#)
- [Cookbook](#)