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## Parking Macello

### v1.1, 19.06.2024

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## Preliminary notes

The Municipality of Bolzano has activated a new parking area. The technological supplier is Sfhera, and there is no integration with the parking management system operated by Famas System, which provides us the data of all other parking areas of the city of Bolzano, since this kind of integration has been considered too expensive.

The parking monitoring is based on a camera that monitors the incoming / exiting vehicles. By considering the initial state and the capacity of the parking area it is possible to estimate the real-time availability of the parking area.

## Data transmission modalities

We therefore decided that in this case the parking area transmits a push of their real-time data directly to the Open Data Hub, namely to <https://push.api.dev.testingmachine.eu/push/municipality-bolzano/parking-macello> (testing environment). Proper credentials have been properly communicated.

The data message looks like the following:

```
{"uid": "8", "park": "bolzano-macello", "in": "10", "out": "9", "floor": "0";  
"lots": "362"; "tot": "370"; }
```

## Specification of the modalities of integration in the Open Data Hub

### PARKING STATION

As far as the mapping of the static metadata is concerned, following mapping has to be considered. The fields marked as METADATA have to be stored in the corresponding metadata table.

Data stream fields	Open Data Hub parameters
<b>uid</b>	stationcode
<b>park</b>	name
<b>lat, long</b>	pointprojection
<b>floor</b>	METADATA
<b>tot</b>	METADATA

Table 1: ParkingStationmetadata proposed mapping.

The other fields should be populated as follows:

- **origin:** to be set as “**Municipality Bolzano**”
- **stationtype:** to be set as “**ParkingStation**”

NB: “tot” = “nominal capacity of the parking area” → saved as ‘**capacity**’

### DATA TYPES AND MEASUREMENTS

The data stream provides following fields that contain real-time measurements:

- in: number of vehicles that have entered in the parking area
- out: number of vehicles that have exited from the parking area
- lots: number of available places

The field “lots” has to be matched with the existing data type “**free**”. For the other two fields, new corresponding data types, e.g. “**entering-vehicles**” and “**exiting vehicles**” have to be created. The timestamp of the push message has to be considered for the storage of the correspondent timestamp values. These values have to be stored as measurement, like the other ParkingStations.