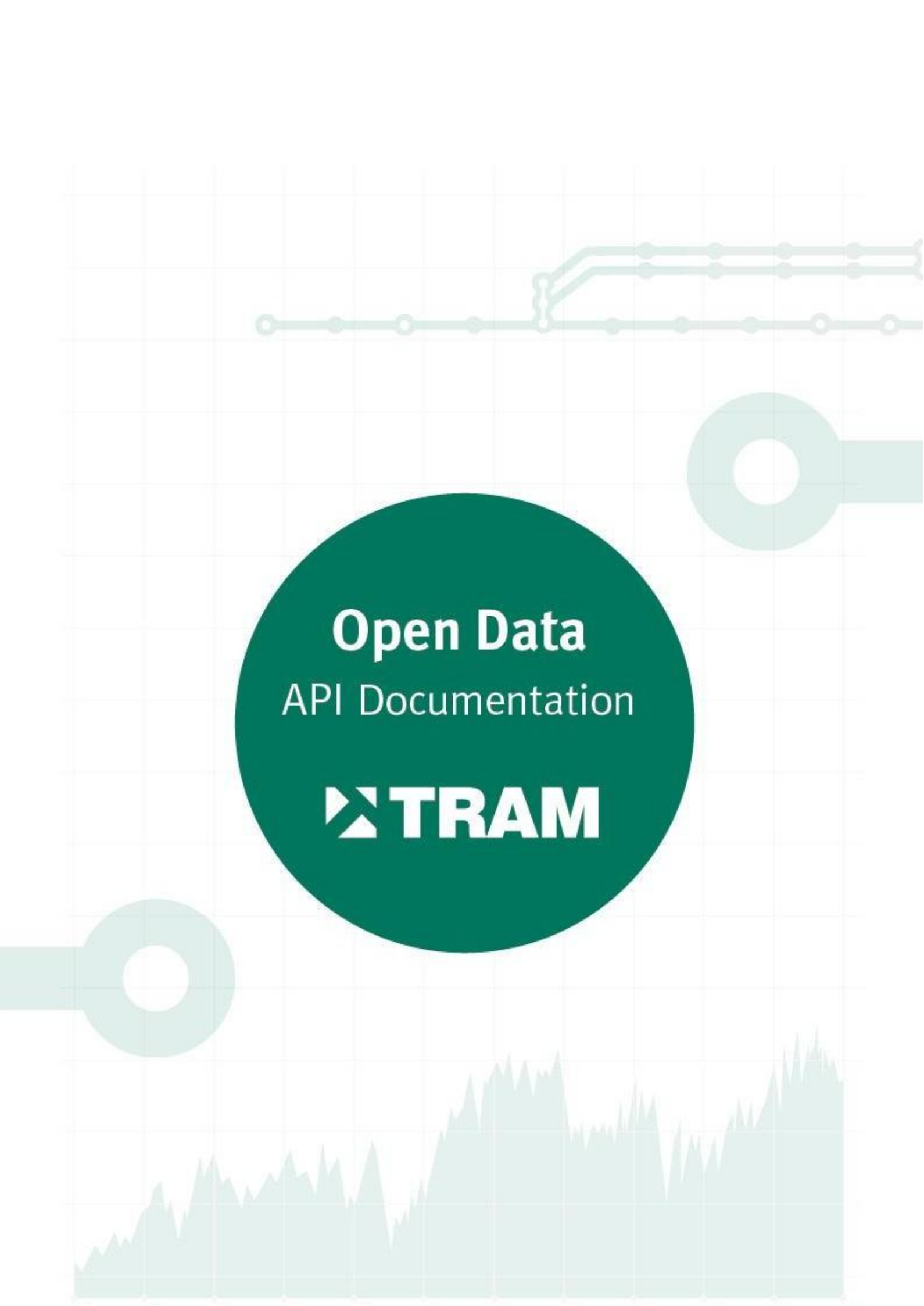




Open Data

API Documentation

 **TRAM**

Contents

ABOUT THE DOCUMENT	4
AUTHENTICATION.....	4
REGISTRATION	4
OAUTH 2.0 AUTHENTICATION.....	4
AVAILABLE CALLS	7
NETWORKS	7
NETWORK BY ID	8
LINES	9
LINE BY ID.....	10
STOPS	11
STOP BY ID	13
STOPS ON ONE LINE.....	14
STOP ON ONE LINE BY ID	15
CONNECTIONS.....	16
CONNECTION BY ID	18
CONNECTIONS AT A STOP.....	19
CONNECTION AT A STOP BY ID	20
POINTS OF SALE.....	21
POINT OF SALE BY ID.....	23
OFFICES.....	24
OFFICE BY ID.....	25
TIMETABLES.....	26
TIMETABLE BY STOP	27
ROUTES.....	28
ROUTE BY STOP	29
TRIPS.....	30
ACTIVE VEHICLES	32
GTFS REAL TIME	33
GTFS REAL TIME VEHICLE POSITION	34
GTFS REAL TIME ALERTS	34
OCCUPANCY	36
OCCUPANCY BY NETWORK ID	37
OCCUPANCY BY NETWORK ID AND VEHICLE ID.....	38
ALTERATIONS.....	39
PAGINATION	40
SORTING.....	41

ABOUT THE DOCUMENT

The following document describes how to use the TRAM Open Data API.

Version	Date	Description
1.0	13/03/2017	Initial documentation.

AUTHENTICATION

TRAM Open Data uses OAuth2 authentication protocol to validate user identity. This section describes the process to follow to be able to use the API properly.

REGISTRATION

The first step in obtaining access to the service is to register on the TRAM Open Data website:

<https://opendata.tram.cat/>

Once the user has completed the registration form, they will be sent an email with instructions on how to obtain the passwords required to use the information available in the TRAM Open Data API.

OAuth 2.0 AUTHENTICATION

All calls by the TRAM Open Data API require the **HTTP Authorization** header with the format: "Bearer <ACCESS_TOKEN>".



Authorization

Bearer<ACCESS_TOKEN>

Failure to complete this field or using an invalid Access token will return an **error code 401 (Unauthorized)** to the user, indicating that they do not have permission to access the contents.

The **Access token** is a password with a limited duration (1 hour) that enables users to make **HTTP calls to the API**. Once the **Access token's** lifetime has timed out, a new one must be generated.

To generate the *Access token* an **HTTP POST** call with this configuration must be made:

REQUEST

Method	URL	Content Type
POST	/connect/token	x-www-form-urlencoded

Parameter Name	Type	Description
grant_type	string	Compulsory. This field must always have the " <i>client_credentials</i> " value.
client_id	string	Compulsory. User identifier. This is issued to the user by email once they have completed web registration.
client_secret	string	Compulsory. User's password. This is issued to the user by email once they have completed web registration This password is non-transferable and must be stored safely to prevent security breaches.

When run properly, this call returns a response with the format:

RESPONSE

Status	Response
200	<pre>{ "resource": "resource_server", "token_type": "Bearer", "access_token": "<ACCESS_TOKEN>", "expires_in": 3600 }</pre>

The **ACCESS_TOKEN** obtained in this response is the password that must be used in the *HTTP Authorization* of all calls to the API.

Below is an example of how to complete the authentication process properly for an example user (fictitious data) using the *Postman* tool (*HTTP* client):

- Client id: adria.alvarez@itequia.com
- Client secret: 7d9c9f7c-9524-4b43-8f6e-690a305a48b4

First we generate the *Access Token* that will allow us to make calls to the API for an hour:

- URL: *POST/connect/token*
- Parameters:
 - *grant_type*: *client_credentials*
 - *client_id*: adria.alvarez@itequia.com
 - *client_secret*: *7d9c9f7c-9524-4b43-8f6e-690a305a48b4*

This call returns this result:

```
{
  "resource": "resource_server",
  "token_type": "Bearer",
  "access_token": "CfDJ8LpXctUbmtrAgQ3_6srPp_iMTxyXogSu1ybQR2FMymWZa4M9l2zXnbSrJthHqHhM-q3h6_9jiUEsT1oHs4ZNV0o6Wmc0UNBex0V6WyR5UjAyPMDwitCBI_Bpr_55GCzdvfKaZO6OZRMd30R97G-5am-1vQH5vggT9J4T23k_Mh7Jf5OP4xL16_MsTVM-F4sUs7DGquGAyKMQkx1lFnXPGlPw_OU-Dc9nktdHjg4s0e-BH19wmIGCtA4jbb69-b5FNPmEmN0nwzJoX1vsuspjff0ImCXR9AFjCWugrVhbVoPOFljxnaQ5_XND0XporZ-QWdjTpjK8RRbfOwidPhk_UARMSA_uhJ4x0g0hoqEkDL9yIacDWjBs3e3Fk3KZUK8Abuu-BolZLy0s0K04JVM-6tdOmcRUPDha2yp5ApSVWhJCRS5XSM3w-luNPwrisibkojIumDrD1tfQkZLGZmHFbkEnCA4VJ6NCcKSEL9o-AtKuCqqMWxZMffou4Xny4IBSoqF0lm_olHSxeoxA9IfMVhmbd3rJs2seLUiCMPmpIDVhbxL87S77m6RZ7O2-5zI-8OLBV9d-wFPfAK2WXjIbssnR98cKhSglJcsFC5T7ubwHgvAHzfD4iaZ5CMA_kf-Ydq3CK0Yk81gYCsR_gz0K-doTsZolc0",
  "expires_in": 3600
}
```

Finally, we use the previous *access_token* in the *HTTP Authorization* header for authentication. This header must be entered for **all** calls made to the TRAM Open Data API:

- Authorization: *Bearer*
CfDJ8LpXctUbmtrAgQ3_6srPp_iMTxyXogSu1ybQR2FMymWZa4M9l2zXnbSrJthHqHhM-q3h6_9jiUEsT1oHs4ZNV0o6WmcoUNBexoV6WyR5UjAyPMDwitCBI_Bpr_55GCzdvfKaZO-6OZRMd30R97G-5am1vQH5vggT9J4T23k_Mh7Jf5OP4xL16_MsTVM-F4sUs7DGquGAyKM-Qkx1lFnXPGlPw_OU-Dc9nktdHjg4s0eBH19wmlGCtA4jbb69-b5FNPmEmNonwzJoX1vsuspjff0ImCXR9AFjCWugrVhbVoPOFljxnaQ5_XND0XporZQWdjTpjK8RRbfOwidPhk_UARMSA_uhJ4xogohoqEkDL9ylacDWjBs3e3Fk3KZUK8Abuu-BolZLyOsoKO4JVM6tdOmcRUPDha2yp5ApS-VWhJCRS5XSM3w-luNPwrisibkojIumDrD1tfQkZLGZmHFbkEnCA4VJ6NCcKSEL9oAtKuCqqMWx-ZMffou4Xny4IBSoqFolm_olHSxeoxA9IfMVhmbd3rJs2seLUiCMPmpIDVhbxL87S77m6RZ7O2-5zI-8OLBV9d-wFPfAK2WXjIbssnR98cKhSglJcsFC5T7ubwHgvAHzfD4iaZ5CMA_kf-Ydq3CK0Yk81gYCs-vR_gzoKdoTsZolco

AVAILABLE CALLS

NETWORKS

Used to obtain information on all networks available on the TRAM system. There are currently two networks: TRAMBAIX and TRAMBESÒS.

REQUEST

Method	URL
GET	/api/v1/networks

Parameter Name	Type	Default Value	Description
name	string	-	Network name.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the networks available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the networks sorted by name in ascending order, use sort=name, and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with Network-type objects: <pre>{ "name": "TRAMBAIX", "id": 1 }</pre>

NETWORK BY ID

Used to obtain information on a [specific](#) network. To select the network in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/networks/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. <i>Network ID.</i>

RESPONSE

Status	Response
200	Returns a single Network -type object: <pre>{ "name": " TRAMBAIX ", "id": 1 }</pre>
400	Error code indicating that there is no network with the ID entered: <pre>{ "code": 400, "message": "Network not found" }</pre>

LINES

Used to obtain information on all the available lines on the TRAM system.
There are currently six different lines: T1, T2, T3 (part of the TRAMBAIX network) and T4, T5, T6 (part of the TRAMBESÒS network).

REQUEST

Method	URL
GET	/api/v1/lines

Parameter Name	Type	Default Value	Description
name	string	-	Name of the line.
description	string	-	Description of the line.
network	string	-	Network to which the line belongs, with possible values: "TRAMBAIX" or "TRAMBESÒS" .
image	string	-	Name of image file with photo of the line.
code	number	-	Line code.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the lines available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the lines sorted in ascending or descending order, use sort=name, and sort=-name respectively.

RESPONSE

Status	Response
200	Returns an array with <i>Line</i> -type objects: <pre>{ "name": "T1", "description": null, "network": { "name": "TRAMBAIX", "id": 1 }, "code": 1, "image": "/images/line/image.png", "id": 1 }</pre>

LINE BY ID

Used to obtain information on a **specific** line. To select the line in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/lines/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. <i>Line ID.</i>

RESPONSE

Status	Response
200	Returns a single <i>Line</i> -type object: <pre>{ "name": "T1", "description": null, "network": { "name": "TRAMBAIX", "id": 1 }, "code": 1, "image": "/images/line/image.png", "id": 1 }</pre>
400	Error code indicating that there is no line with the ID entered: <pre>{ "code": 400, "message": "Line not found" }</pre>

STOPS

Used to obtain information on all the stops available on the TRAM system. Each stop may be associated with one or more TRAM lines.

REQUEST

Method	URL
GET	/api/v1/stops

Parameter Name	Type	Default Value	Description
name	string	-	Stop name.
description	string	-	Description of the stop.
gtfsCode	string	-	GTFS stop code.
latitude	number	-	Latitudes of the stop's GPS coordinates.

longitude	number	-	Longitude of the stop's GPS coordinates.
outboundCode	number	-	Code for outbound journey.
returnCode	number	-	Code for return journey.
image	string	-	Name of image file with photo of stop.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the stops available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the stops sorted by name in ascending order, use sort=name , and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with Stop-type objects: <pre>{ "name": "Glòries", "description": "Parada Glòries del TRAM", "latitude": 1.5, "longitude": 1.5, "outboundCode": 111, "returnCode": 112, "gtfsCode": "GLRS", "order": null, "image": "/images/stops/image.png", "id": 1 }</pre>

STOP BY ID

Used to obtain information on a **specific** stop. To select the stop in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/stops/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. Stop ID.

RESPONSE

Status	Response
200	Returns a single Stop -type object: <pre>{ "name": "Glòries", "description": "Parada Glòries del TRAM", "latitude": 1.5, "longitude": 1.5, "outboundCode": 111, "returnCode": 112, "gtfsCode": "GLRS", "order": null, "image": "/images/stops/image.png", "id": 1 }</pre>
400	Error code indicating that there is no stop with the ID entered: <pre>{ "code": 400, "message": "Stop not found" }</pre>

STOPS ON ONE LINE

Used to obtain the stops associated with a [specific](#) line. To select the line you wish to query, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/lines/{lineId}/stops

Parameter Name	Type	Default Value	Description
lineId	number	-	Compulsory. <i>ID</i> of the line for which you wish to query the available stops.
name	string	-	Stop name.
description	string	-	Description of the stop.
gtfsCode	string	-	GTFS stop code.
latitude	number	-	Latitudes of the stop's GPS coordinates.
longitude	number	-	Longitude of the stop's GPS coordinates.
outboundCode	number	-	Code for outbound journey.
returnCode	number	-	Code for return journey.
image	string	-	Name of image file with photo of the stop.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the stops available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the stops sorted by name in ascending order, use sort=name , and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with Stop-type objects: <pre>{ "name": "Glòries", "description": "Parada Glòries del TRAM", "latitude": 1.5, "longitude": 1.5, "outboundCode": 111, "returnCode": 112, "gtfsCode": "GLRS", "order": 3, "image": "/images/stops/image.png", "id": 1 }</pre> The object's Order field indicates this stop's position on the line queried.

STOP ON ONE LINE BY ID

Used to obtain information on a **specific** stop associated with a specific line. To select the line and stop in question, enter their **IDs**.

REQUEST

Method	URL
GET	/api/v1/lines/{lineId}/stops/{stopId}

Parameter Name	Type	Default Value	Description
lineId	number	-	Compulsory. ID of the line for which you the stop is to be queried.
stopId	Number	-	Compulsory. ID of the stop to be queried.

RESPONSE

Status	Response
200	Returns a single Stop-type object: <pre>{ "name": "Glòries", "description": "Parada Glòries del TRAM", "latitude": 1.5, "longitude": 1.5, "outboundCode": 111, "returnCode": 112, "gtfsCode": "GLRS", "order": 3, "image": "/images/stops/image.png", "id": 1 }</pre> The object's Order field indicates this stop's position on the line queried.
400	Error code indicating that there is no stop on the line with the ID entered: <pre>{ "code": 400, "message": "Stop not found" }</pre>

CONNECTIONS

Used to obtain information on all the connections available on the TRAM system. The connections may indicate changeover points between the TRAM lines and connections to other public transport systems (underground, train, etc.). They also include the available customer service points.

REQUEST

Method	URL
GET	/api/v1/connections

Parameter Name	Type	Default Value	Description
name	string	-	Name of the connection.
image	string	-	Name of image file with photo of the connection.
latitude	number	-	Latitude of the connection's GPS coordinates.
longitude	number	-	Longitude of the connection's GPS coordinates.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the connections available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the connections sorted by name in ascending order, use sort=name , and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with <i>Connection</i>-type objects: <pre>{ "name": "Metro L3", "latitude": 123, "longitude": 5455, "order": null, "image": "/images/connection/image.png", "id": 1 }</pre>

CONNECTION BY ID

Used to obtain information on a **specific** connection. To select the connection in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/connections/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. Connection ID.

RESPONSE

Status	Response
200	Returns a single Connection -type object: <pre>{ "name": "Metro L3", "latitude": 123, "longitude": 5455, "order": null, "image": "/images/connection/image.png", "id": 1 }</pre>
400	Error code indicating that there is no connection with the ID entered: <pre>{ "code": 400, "message": "Connection not found" }</pre>

CONNECTIONS AT A STOP

Used to obtain the connections associated with a **specific** stop. To select the stop to be queried, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/stops/{stopId}/connections

Parameter Name	Type	Default Value	Description
stopId	number	-	Compulsory. ID of the stop for which the available connections are to be queried.
Name	string	-	Name of the connection.
Image	string	-	Name of image file with photo of the connection.
Latitude	number	-	Latitude of the connection's GPS coordinates.
Longitude	number	-	Longitude of the connection's GPS coordinates.
Page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the connections available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
Sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the connections sorted by name in ascending order, use sort=name, and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with Connection-type objects: <pre>{ "name": "Metro L3", "latitude": 123, "longitude": 5455, "order": 1, "image": "/images/connection/image.png", "id": 1 }</pre> The object's Order field indicates this connection's position in the stop queried.

CONNECTION AT A STOP BY ID

Used to obtain information on a **specific** connection, associated with a specific stop. To select the stop and connection in question, enter their **IDs**.

REQUEST

Method	URL
GET	/api/v1/stops/{stopId}/connections/{connectionId}

Parameter Name	Type	Default Value	Description
stopId	number	-	Compulsory. ID of the stop for which you wish to query the connection.
connectionId	number	-	Compulsory. ID of the connection you wish to query.

RESPONSE

Status	Response
200	Returns a single Connection-type object: <pre>{ "name": "Metro L3", "latitude": 123, "longitude": 5455, "order": 1, "image": "/images/connection/image.png", "id": 1 }</pre> The object's Order field indicates this connection's position in the stop queried.
400	Error code indicating that there is no connection at the stop selected with the ID entered: <pre>{ "code": 400, "message": "Connection not found" }</pre>

POINTS OF SALE

Used to obtain information on all the points of sale available on the TRAM system. Points of sale are terminals where users can buy different kinds of tickets for travel on the TRAM.

REQUEST

Method	URL
GET	/api/v1/pointsOfSale

Parameter Name	Type	Default Value	Description
name	string	-	Name of the point of sale.
description	string	-	Description of the point of sale.

latitude	number	-	Latitude of the point of sale's GPS coordinates.
longitude	number	-	Longitude of the point of sale's GPS coordinates.
page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the points of sale available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain all the points of sale sorted by name in ascending order, use sort=name , and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with <i>PointofSale</i>-type objects: <pre>{ "name": "Glòries", "description": "Punt de venda a la parada de Glòries.", "latitude": 41.393856, "longitude": 2.19724441, "id": 2 }</pre>

POINT OF SALE BY ID

Used to obtain information on a [specific](#) point of sale. To select the point of sale in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/pointsOfSale/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. <i>ID</i> of the point of sale.

RESPONSE

Status	Response
200	Returns a single <i>PointOfSale</i> -type object: <pre>{ "name": "Glòries", "description": "Punt de venda a la parada de Glòries.", "latitude": 41.393856, "longitude": 2.19724441, "id": 2 }</pre>
400	Error code indicating that there is no point of sale with the ID entered: <pre>{ "code": 400, "message": "Point of sale not found" }</pre>

OFFICES

Used to obtain information on TRAM offices in Barcelona.

REQUEST

Method	URL
GET	/api/v1/offices

Parameter Name	Type	Default Value	Description
name	string	-	Name of the office.
Description	string	-	Description of the office.
Image	string	-	Name of image file with photo of the office.
Latitude	number	-	Latitude of the office's GPS coordinates.
Longitude	number	-	Longitude of the office's GPS coordinates.
Page	number	1	The page number to be queried. If a page number equal to 0 is entered, all the offices available will be returned on a single page.
pageSize	number	10	The number of items per page to be queried. Maximum value: 100.
Sort	string	-	Used to sort the results obtained by one or more criteria in ascending or descending order. For example, to obtain the offices sorted by name in ascending order, use sort=name , and sort=-name for descending order.

RESPONSE

Status	Response
200	Returns an array with <i>Office</i> -type objects: <pre>{ "name": "Oficina d'Atenció al Client", "description": "Av. Barcelona s/n (a prop de la parada de Bon Viatge de la T1 i T2) 08970 Sant Joan Despí.", "latitude": 232, "longitude": 222, "image": "/images/office/image.png", "id": 1 }</pre>

OFFICE BY ID

Used to obtain information on a **specific** office. To select the office in question, enter its *ID*.

REQUEST

Method	URL
GET	/api/v1/offices/{id}

Parameter Name	Type	Default Value	Description
id	number	-	Compulsory. Office <i>ID</i> .

RESPONSE

Status	Response
200	Returns a single <i>Office</i> -type object: <pre>{ "name": "Oficina d'Atenció al Client", "description": "Av. Barcelona s/n (a prop de la parada de Bon Viatge de la T1 i T2) 08970 Sant Joan Despí.", "latitude": 232, "longitude": 222, "image": "/images/office/image.png", "id": 1 }</pre>
400	Error code indicating that there is no office with the ID entered: <pre>{ "code": 400, "message": "Office not found" }</pre>

TIMETABLES

Used to obtain the arrival time, stop and destination of the next scheduled TRAMS.

REQUEST

Method	URL
GET	/api/v1/stopTimes

RESPONSE

Status	Response
200	Returns an array with <i>StopTime</i>-type objects: <pre>{ "stopName": "FRANCESC MACIA", "code": 1001, "arrivalTime": "2017-03-14 10:58:00", "destination": "SANT FELIU-C.C.", "lineName": "T3" }</pre> Moreover, the response contains a field in the <i>HTTP</i> header called X-Total-Count, where the total number of times found in the query is reported.

TIMETABLE BY STOP

Used to obtain the arrival time and destination of the next scheduled TRAMS at a stop. To select the stop wanted, enter the stop's code.

REQUEST

Method	URL
GET	/api/v1/stopTimes/{code}

Parameter Name	Type	Default Value	Description
code	number	-	Compulsory. Code of the stop to be queried. Each TRAM stop has two different codes, depending on the direction of travel.

RESPONSE

Status	Response
200	Returns an array with StopTime-type objects: <pre>{ "stopName": "FRANCESC MACIA", "code": 1001, "arrivalTime": "2017-03-14 10:58:00", "destination": "SANT FELIU-C.C.", "lineName": "T3" }</pre> Moreover, the response contains a field in the <i>HTTP</i> header called X-Total-Count, where the total number of times found in the query is reported.

ROUTES

Used to obtain all the scheduled TRAM routes.

REQUEST

Method	URL
GET	/api/v1/routes

RESPONSE

Status	Response
200	Returns an array with Route-type objects: <pre>{ "id": "07043585", "name": "SANT FELIU-C.C.", "stopName": "FRANCESC MACIA", "code": 1001, "date": "2017-03-14", "lineName": "T3" }</pre> Moreover, the response contains a field in the <i>HTTP</i> header called X-Total-Count, where the total number of routes found in the query is reported.

ROUTE BY STOP

Used to obtain all the routes scheduled at a TRAM stop. To select the required stop, enter the stop's code.

REQUEST

Method	URL
GET	/api/v1/routes/{code}

Parameter Name	Type	Default Value	Description
code	number	-	Compulsory. Code of the stop to be queried. Each TRAM stop has two different codes, depending on the direction of travel.

RESPONSE

Status	Response
200	Returns an array with Route-type objects: <pre>{ "id": "07043585", "name": "SANT FELIU-C.C.", "stopName": "FRANCESC MACIA", "code": 1001, "date": "2017-03-14", "lineName": "T3" }</pre> Moreover, the response contains a field in the <i>HTTP</i> header called X-Total-Count, where the total number of routes found in the query is reported.

TRIPS

Used to obtain all programmed trips between two tops in a range of time and a specific day.

REQUEST

Method	URL
GET	/api/v1/trips?network={network}&origin={origin}&destination={destination}&date={date}&startTime={startTime}&endTime={endTime}

Parameter Name	Type	Default Value	Description
network	string	-	Compulsory. Red de las paradas. Posibles valores: "TRAMBAIX" o "TRAMBESÒS".
origin	number	-	Compulsory. ID de la parada de origen del trayecto.
destination	number	-	Compulsory. ID de la parada de destino del trayecto.
date	string	-	Compulsory. Fecha del trayecto. Formato dd/MM/yyyy.
startTime	string	-	Compulsory. Hora de inicio del intervalo de tiempo a consultar. Formato: HH:mm.
endTime	string	-	Compulsory. Hora final del intervalo de tiempo a consultar. Formato: HH:mm.

RESPONSE

Status	Response
200	Returns an array with <i>Trip</i>-type objects: <pre>{ "origin": { "stop": "Centre Miquel Martí i Pol", "line": "T2", "stopTime": "11:00" }, "connection": { "arrival": { "stop": "Montesa", "line": "T2", "stopTime": "11:15" }, "departure": { "stop": "Montesa", "line": "T3", "stopTime": "11:20" } }, "destination": { "stop": "Rambla de Sant Just", "line": "T3", "stopTime": "11:26" }, "duration": 26 }</pre> The connection field will have value only in trip where does not exists a direct trip between stops and it is necessary to transfer to another train. The duration field indicates the duration the end and beginning of a trip in minutes

ACTIVE VEHICLES

Used to obtain all the currently active vehicles, along with their position between stops.

REQUEST

Method	URL
GET	/api/v1/activevehicles?networkId={networkId}&lineId={lineId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Network ID
lineId	number	-	Line ID

RESPONSE

Status	Response
200	Returns an array of objects of type Vehicle: <pre>{ "vehicleId": 2, "vehicleStatus": "LIGN", "vehicleStatusPhysical": "0", "lineId": 2, "lineName": "T2", "originStopCode": 1101, "originStopName": "FRANCESC MACIA", "nextStopCode": 1002, "nextStopName": "L'ILLA", "vehiclePosition": 0,</pre>

	<pre>"inStop": true, "destinationStopName": "LLEVANT-PLANES",</pre>
--	---

	<pre>"delay": 0, "courseDirection": "A", }</pre> The vehiclePosition field indicates the meters traveled between the origin stop and the next one. The inStop field indicates whether the vehicle is at a stop or not. The delay field indicates travel deviation from the expected time in seconds. It is positive in case of delay and negative in case of advance. Moreover, the response contains a field in the <i>HTTP</i> header called X-Total-Count, where the total number of times found in the query is reported.
--	---

GTFS REAL TIME

Used to obtain TRAM's GTFS Real Time feed according to the specifications described [here](#). For a full GTFS Real Time reference see this [link](#).

REQUEST

Method	URL
GET	/api/v1/gtfsrealtime?networkId={networkId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Compulsory. Network ID

RESPONSE

Status	Response
200	Returns a GTFS RealTime Feed in Protocol Buffer format.

GTFS REAL TIME VEHICLE POSITION

Allows obtaining real-time GTFS data from TRAM according to the specifications described [here](#). The data includes information about the position of the vehicles, such as latitude and longitude. For a complete reference of GTFS Real Time, follow this [link](#). **Available only on the Trambesòs network.**

REQUEST

Method	URL
GET	/api/v1/gtfsrealtime?networkId={networkId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Compulsory. Network ID

RESPONSE

Status	Response
200	Returns a GTFS RealTime Feed in Protocol Buffer format.

GTFS REAL TIME ALERTS

Used to obtain TRAM's GTFS Real Time Alerts. For a full GTFS Real Time Alert reference see this [link](#).

REQUEST

Method	URL
GET	/api/v1/GtfsRealtimeAlerts?networkId={networkId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Compulsory. Network ID

RESPONSE

Status	Response
200	Returns an array of objects of type Alert <pre> { "header": { "gtfs_realtime_version": "2.0", "incrementality": "FULL_DATASET", "timestamp": 1627297380 }, "entity": [{ "active_period": { "start": 1627297380, "end": 1688085000 }, "informed_entity": { "agency_id": "TRAMBAIX" }, "cause": "UNKNOWN_CAUSE", "effect": "UNKNOWN_EFFECT", "header_text": [{ "text": "Alert header text.", "language": "en", }], "description_text": [{ "text": "Alert description text.", "language": "en", }], "url": [{ "text": "https://tram.cat.es/alerta", "language": "en", }] }] }</pre>

OCCUPANCY

Used to obtain the occupancy level of active vehicles in real time. The occupancy can be as follows: EMPTY, MANY_SEATS_AVAILABLE, FEW_SEATS_AVAILABLE, STANDING_ROOM_ONLY and FULL.

REQUEST

Method	URL
GET	/api/v1/Occupancy

RESPONSE

Status	Response
200	Returns an Array of Occupancy objects <pre>[{ "vehicleId": "2", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }, { "vehicleId": "3", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }, { "vehicleId": "4", "networkId": "1", "occupancy": "EMPTY" }, { "vehicleId": "6", "networkId": "1", "occupancy": "EMPTY" }, { "vehicleId": "11", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }]</pre>

OCCUPANCY BY NETWORK ID

Used to obtain the occupancy level of active vehicles of a given network in real time. The occupancy can be as follows: EMPTY, MANY_SEATS_AVAILABLE, FEW_SEATS_AVAILABLE, STANDING_ROOM_ONLY and FULL.

REQUEST

Method	URL
GET	/api/v1/Occupancy/{networkId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Compulsory. Network ID.

RESPONSE

Status	Response
200	Returns an Array of Occupancy objects <pre>[{ "vehicleId": "2", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }, { "vehicleId": "3", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }, { "vehicleId": "4", "networkId": "1", "occupancy": "EMPTY" }, { "vehicleId": "6", "networkId": "1", "occupancy": "EMPTY" }]</pre>

OCCUPANCY BY NETWORK ID AND VEHICLE ID

Allows obtaining the occupancy level of an active train within a network based on its ID in real time. The occupancy can be as follows: EMPTY, MANY_SEATS_AVAILABLE, FEW_SEATS_AVAILABLE, STANDING_ROOM_ONLY and FULL.

REQUEST

Method	URL
GET	/api/v1/Occupancy/{networkId}/{vehicleId}

Parameter Name	Type	Default Value	Description
networkId	number	-	Compulsory. Network ID.
vehicleId	number	-	Compulsory. Vehicle ID.

RESPONSE

Status	Response
200	Returns an Occupancy object <pre>{ "vehicleId": "2", "networkId": "1", "occupancy": "MANY_SEATS_AVAILABLE" }</pre>

ALTERATIONS

Used to obtain the list of current service alterations (active and scheduled), including full detail for each alteration. The field "type" can be as follows: "Warning" and "Info".

REQUEST

Method	URL
GET	/api/v1/Alterations

RESPONSE

Status	Response
200	Returns an Array of Alteration objects <pre>{ "id": "123", "title": { "ca": "Incidència a la línia L1", "es": "Incidencia en la línea L1", "en": "Incident on line L1" }, "description": { "ca": "Retards per avaria", "es": "Retrasos por avería", "en": "Delays due to a breakdown" }, "type": "Warning", "lines": ["L1", "L3"] }</pre>

PAGINATION

Most of the calls available in the TRAM Open Data API use pagination in returning results. The paginated calls are:

- GET /networks
- GET /lines
- GET /lines/{lineId}/stops
- GET /stops
- GET /stops/{stopId}/connections
- GET /connections
- GET /pointsOfSale
- GET /offices

In these calls, the number of items to be displayed per page or the page to be queried can be chosen (see the specification for each call).

By default, the page selected is always the first, and 10 items per page are displayed, where the maximum number of items per page is 100.

To view all the pages available for a call on a single page, enter **0** in the **page** field.

The responses for paginated calls also contain **additional HTTP headers** that allow the user to access information on the dataset. These headers are:

- **X-Pagination-Count:** number of items displayed per page.
- **X-Pagination-Page:** page queried.
- **X-Pagination-Total-Count:** total number of items available.
- **X-Pagination-Limit:** number of pages available.

SORTING

Most of the calls available in the TRAM Open Data API allow the user to configure the order in which the data are returned to the user. These calls are:

- GET /networks
- GET /lines
- GET /lines/{lineId}/stops
- GET /stops
- GET /stops/{stopId}/connections
- GET /connections
- GET /pointsOfSale
- GET /offices

In these calls, the **sort** parameter can be used to indicate the order in which the data are to be displayed. This parameter is used to sort by any of the parameters available for each call (see the specification for each call).

For example, to sort the results by the **name** field in alphabetically ascending order, configure the call with:

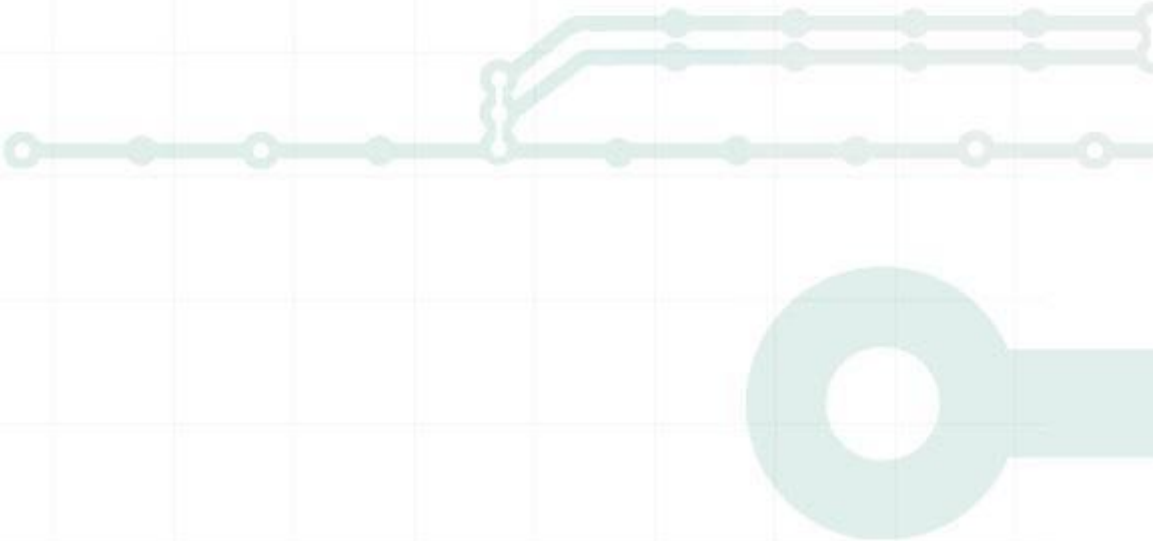
sort=name

To do so in alphabetically descending order, use:

sort=-name

These functions can also be combined. To sort the results by the **name** field in ascending order and to sort the results with the same name by the **description** field in ascending order, configure the current call with:

sort=name, -description



▶ TRAM

