CONNECTING APIS FOR SMART CITIES: CITYBIKES

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INDEX

- Overview: What?
- Features - Demo
- Summary

WHAT?

GOAL

Help citizens use bikes systems around the world by providing an unified platform to find routes and read live information

FEATURES

- Show bike systems and their station status
- Creates routes for bike in the city with optimization depending on live bike availability
- Route download in different coordinate systems and different formats

TECHNOLOGIES

FME Server Automatically processes live data and runs FME Workspaces

FME Desktop FME Workspace creation. Merges data and gives results to client.

OpenLayer Displays Open Street Bikes Map and manages KML layers.

GoogleMaps API Display map for Google Maps and geocodes Places into pair of coordinates

CityBikes API Retrieves data from bike systems around the world and serves the data in a single REST API

Overpass API Streets data from Open Street Maps

BIKE SYSTEMS

HOW?

APIs:

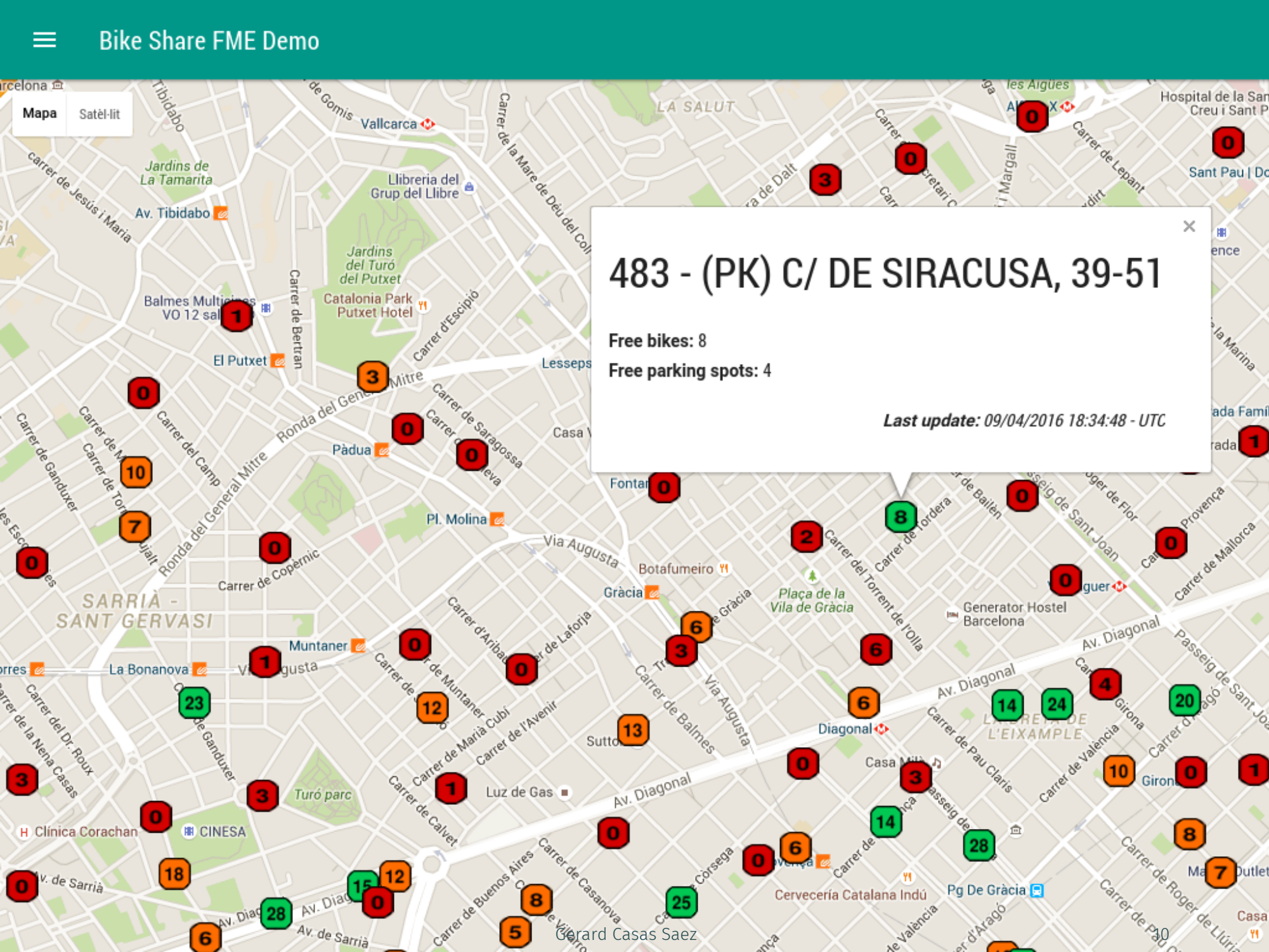
- CityBikes - `citybik.es`

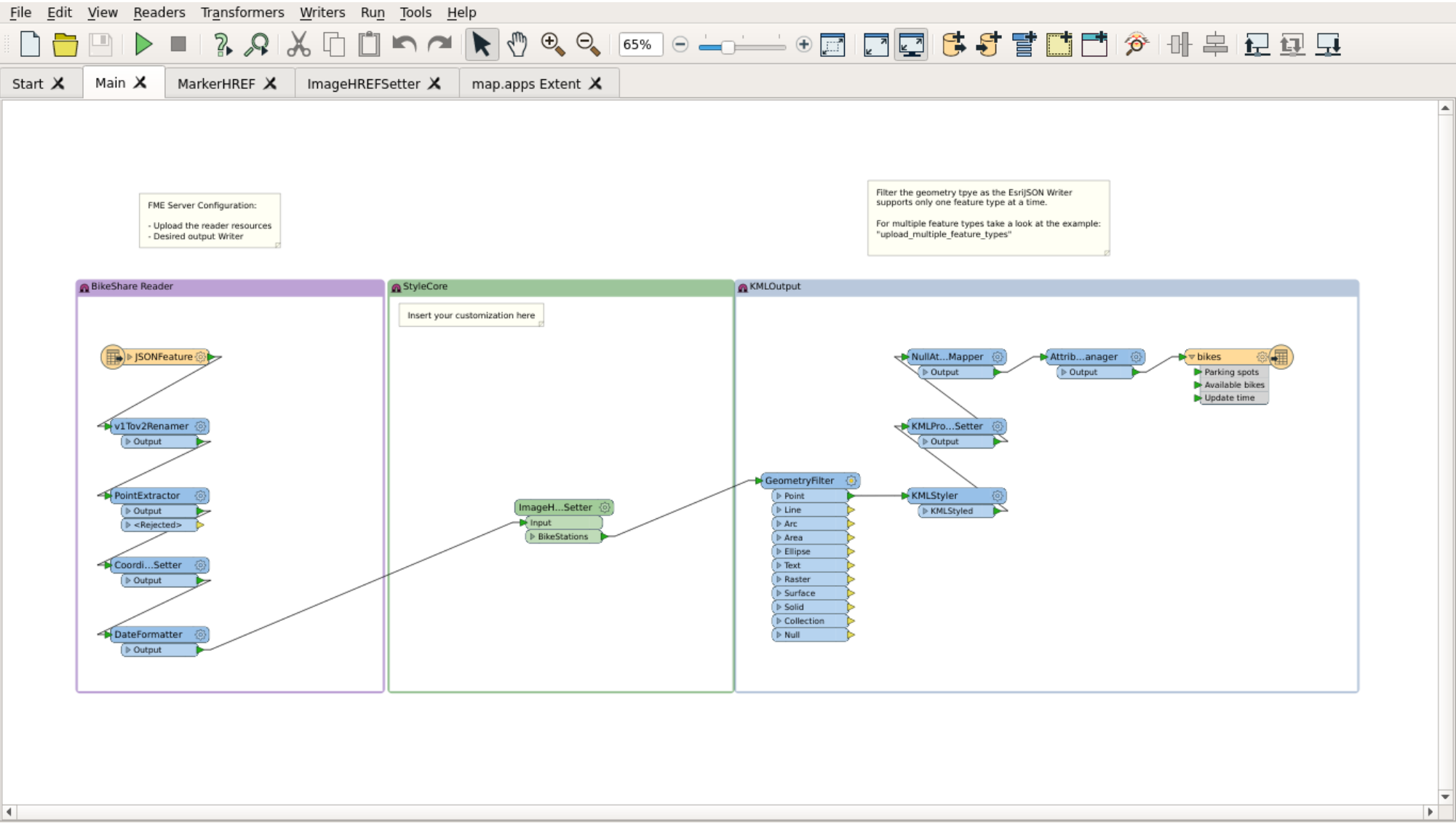
FME Workspace:

- Retrieves data from API
- Conversion to KML

CITIES INCLUDED

- Barcelona
- London
- Köln
- Berlin
- Paris
- Bruxelles
- Santander
- Indianapolis, IN
- Chicago, IL
- and more ...


Bike Share FME Demo
Mapa
Satèl·lit
483 - (PK) C/ DE SIRACUSA, 39-51
Free bikes: 8
Free parking spots: 4
Last update: 09/04/2016 18:34:48 - UTC
Vallcarca
Jardins de La Tamarita
Llibreria del Grup del Llibre
Av. Tibidabo
Jardins del Turó del Putxet
Catalonia Park Putxet Hotel
El Putxet
Pàdua
Pl. Molina
Botafumeiro
Gràcia
Plaça de la Vila de Gràcia
Generator Hostel Barcelona
Diagonal
Muntaner
La Bonanova
Turó parc
Luz de Gas
Clínica Corachan
CINESA
Cervecería Catalana Indú
Pg De Gràcia
SARRIÀ - SANT GERVASI
LA SALUT
Ronda del General Mitre
Via Augusta
Av. Diagonal
Av. de Sarrià


File Edit View Readers Transformers Writers Run Tools Help
65%
Start
Main
MarkerHREF
ImageHREFSetter
map.apps Extent
FME Server Configuration:
- Upload the reader resources
- Desired output Writer
Filter the geometry tpye as the EsrijSON Writer supports only one feature type at a time.
For multiple feature types take a look at the example: "upload_multiple_feature_types"
BikeShare Reader
JSONFeature
v1Tov2Renamer
Output
PointExtractor
Output
<Rejected>
Coordi...Setter
Output
DateFormatter
Output
StyleCore
Insert your customization here
ImageH...Setter
Input
BikeStations
KMLOutput
GeometryFilter
Point
Line
Arc
Area
Ellipse
Text
Raster
Surface
Solid
Collection
Null
KMLStyler
KMLStyled
KMLPro...Setter
Output
NullAt...Mapper
Output
Attrib...anager
Output
bikes
Parking spots
Available bikes
Update time

BIKE ROUTING

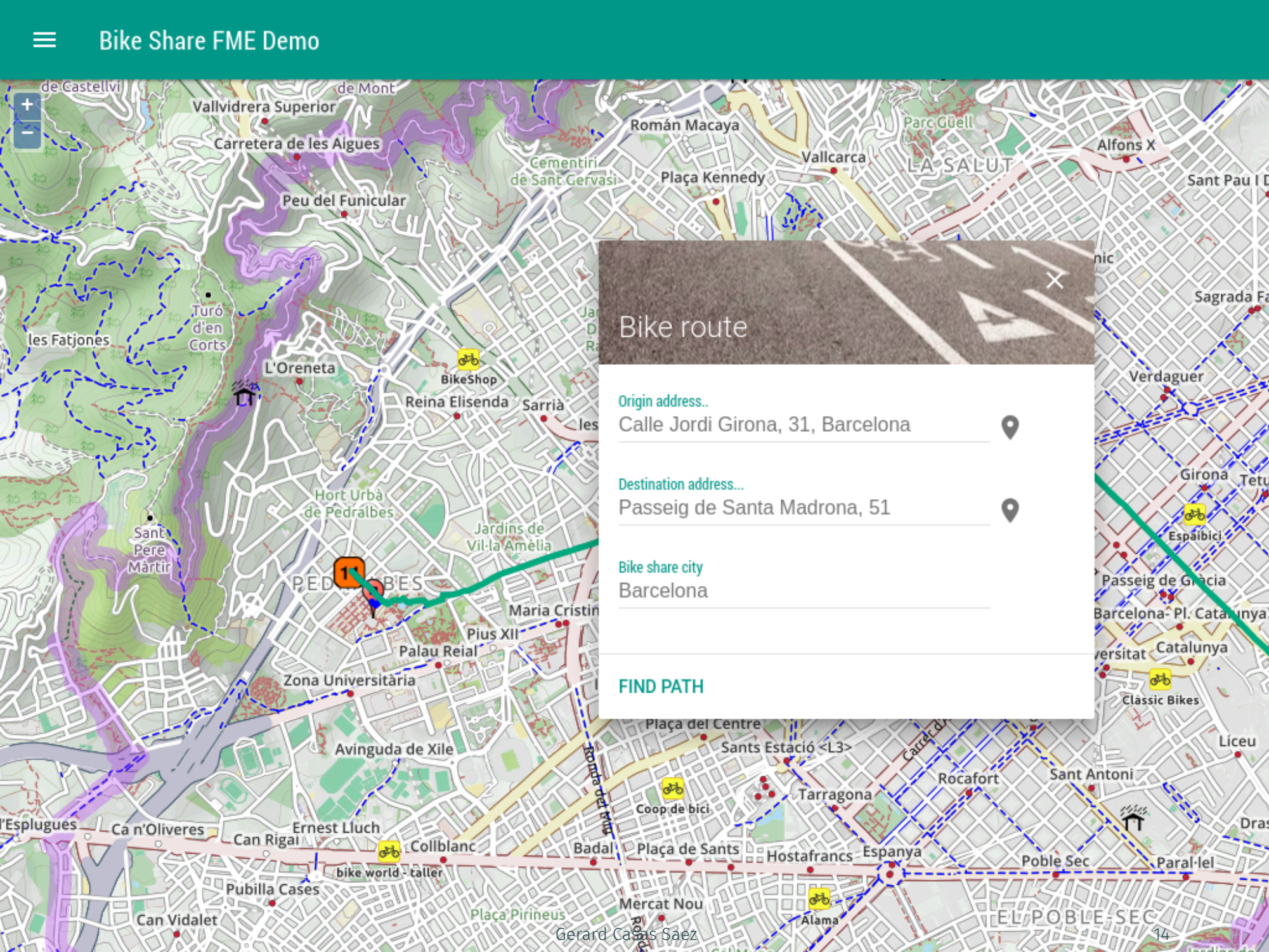
HOW?

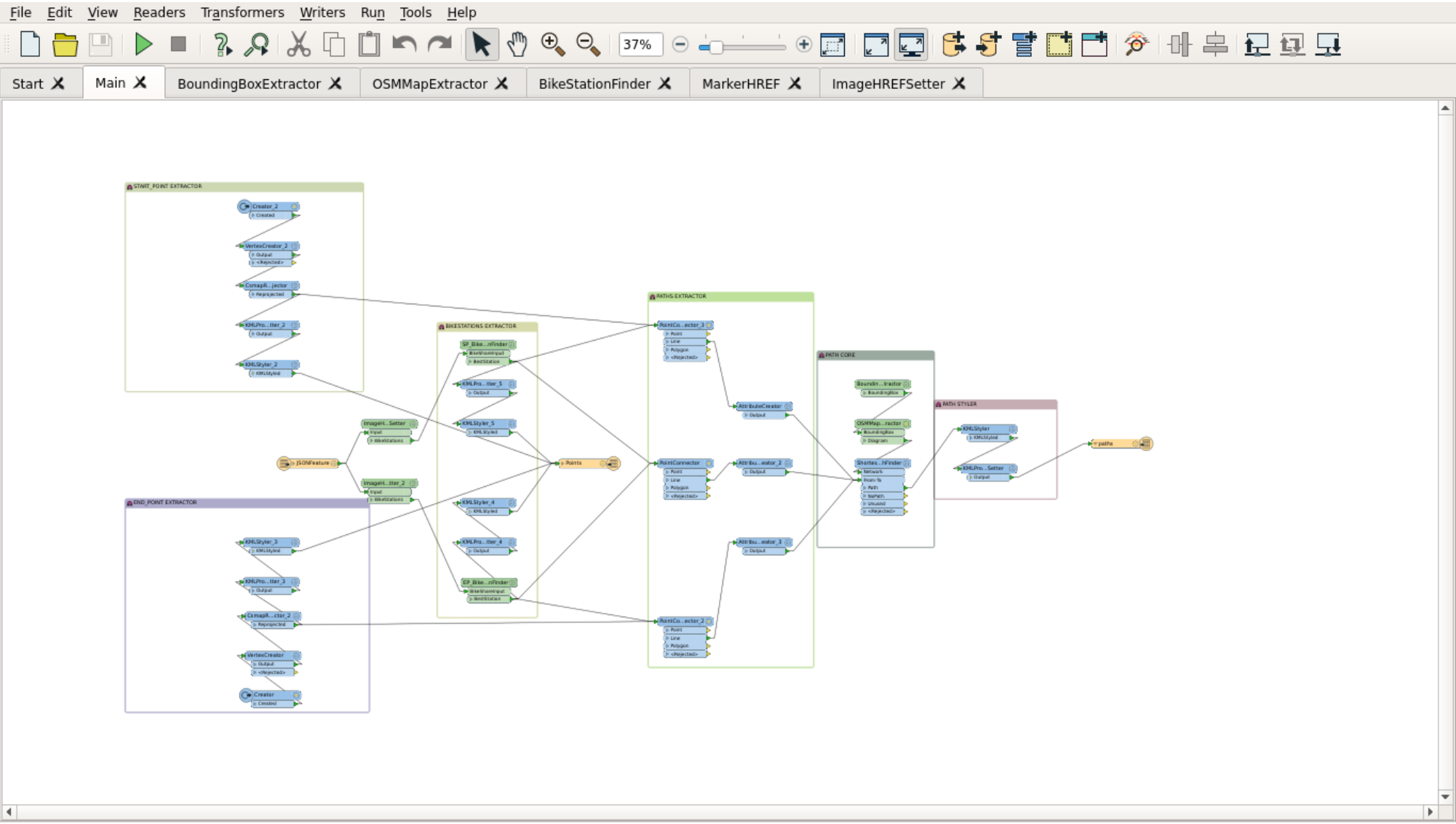
APIs:

- CityBikes - `citybik.es`
- Overpass OSM API `overpass-api.de`
- Geocoder Google Maps API

FME Workspace:

- Custom route engine
- Retrieves live data from API
- Handles street network data from Open Street Maps


Bike Share FME Demo
Bike route
Origin address..
Calle Jordi Girona, 31, Barcelona
Destination address...
Passeig de Santa Madrona, 51
Bike share city
Barcelona
FIND PATH
Vallvidrera Superior
Carretera de les Aigues
Peu del Funicular
Cementiri de Sant Gervasi
Román Macaya
Plaça Kennedy
Vallcarca
Parc Güell
Alfons X
Sagrada Fa
les Fatjones
Turó d'en Corts
L'Oreneta
BikeShop
Reina Elisenda
Sarrià
Verdaguer
Girona
Hort Urbà de Pedralbes
Jardins de Vil·la Amèlia
Sant Pere Màrtir
Espaibici
Passeig de Gràcia
Maria Cristina
Pius XII
Palau Reial
Catalunya
Classic Bikes
Zona Universitària
Plaça del Centre
Avinguda de Xile
Sants Estació
Liceu
Rocafort
Sant Antoni
Tarragona
Coop de bici
Ca n'Oliveres
Ernest Lluch
Can Rigai
Collblanc
Badal
Plaça de Sants
Hostafrancs
Espanya
Poble Sec
Paral·lel
bike world - taller
Pubilla Cases
Mercat Nou
Plaça Pirineus
Can Vidalet
Àlama
EL POBLE-SEC


File Edit View Readers Transformers Writers Run Tools Help
37%
Start
Main
BoundingBoxExtractor
OSMMapExtractor
BikeStationFinder
MarkerHREF
ImageHREFSetter
START_POINT EXTRACTOR
END_POINT EXTRACTOR
BIKESTATIONS EXTRACTOR
PATHS EXTRACTOR
PATH CORE
PATH STYLER

ROUTE DOWNLOAD

HOW?

FME Workspace:

- Format conversion from KML
- Coordinate system conversion

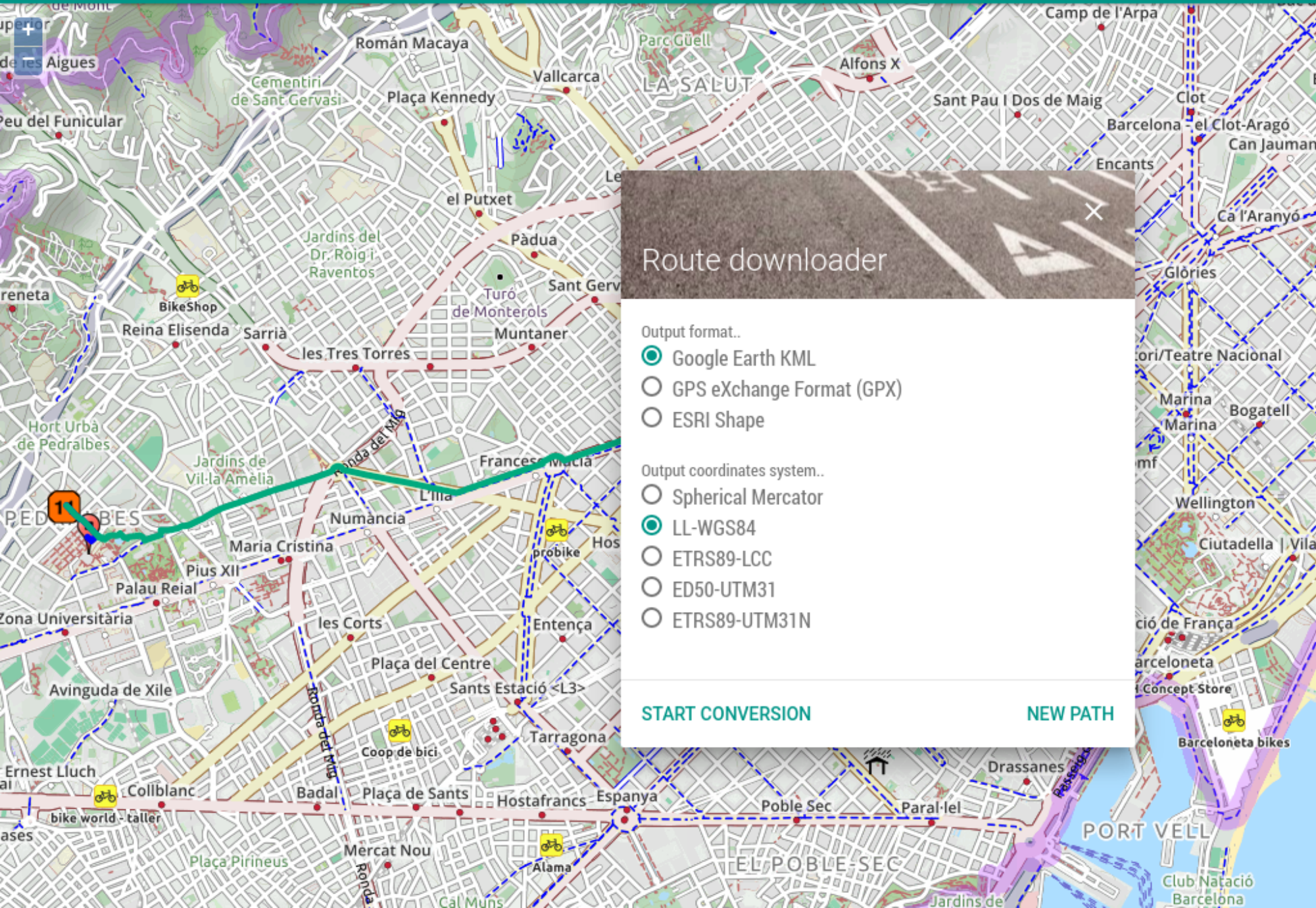
FORMAT

Output formats:

- Google Earth KML
- GPS eXchange Format
- ESRI Shape

Coordinates systems

- Spherical Mercator
- LL-WGS84
- ETRS89-LCC
- ED50-UTM31
- ETRS89-UTM31N


Route downloader
Output format..
Google Earth KML
GPS eXchange Format (GPX)
ESRI Shape
Output coordinates system..
Spherical Mercator
LL-WGS84
ETRS89-LCC
ED50-UTM31
ETRS89-UTM31N
START CONVERSION
NEW PATH
Román Macaya
Vallcarca
Plaça Kennedy
Alfons X
Sant Pau I Dos de Maig
Barcelona - el Clot-Aragó
Encants
el Putxet
Pàdua
Jardins del Dr. Roig i Raventos
Turó de Monterols
Muntaner
Sarrià
les Tres Torres
Reina Elisenda
BikeShop
Hort Urbà de Pedralbes
Jardins de Vil·la Amèlia
L'Illa
Numància
Maria Cristina
Pius XII
Palau Reial
les Corts
Plaça del Centre
Sants Estació <L3>
Avinguda de Xile
Tarragona
Coop de bici
Collblanc
Badal
Plaça de Sants
Hostafrancs
Espanya
Poble Sec
Paral·lel
Drassanes
Mercat Nou
Plaça Pirineus
Glòries
Marina
Bogatell
Wellington
Ciutadella
Barceloneta bikes
PORT VELL
EL POBLE-SEC
Club Natació Barcelona

SUMMARY

SUMMARY

Maps

- Google Maps
- Open Street Maps

Bike stations open data

- Citybik.es

Streets network

- Overpass API (OSM data)

FME usage

- Format conversion
- Custom routing engine
- Coordinate system unificator.

LIVE DEMO

goo.gl/oCaxJh

Questions?

Thanks for listening! :D

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