

CONNECTING APIS FOR SMART CITIES: CITYBIKES

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- Overview: What?
- Features - Demo
- Summary

WHAT?

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

- 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

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

APIs:

- CityBikes - `citybik.es`

FME Workspace:

- Retrieves data from API
- Conversion to KML

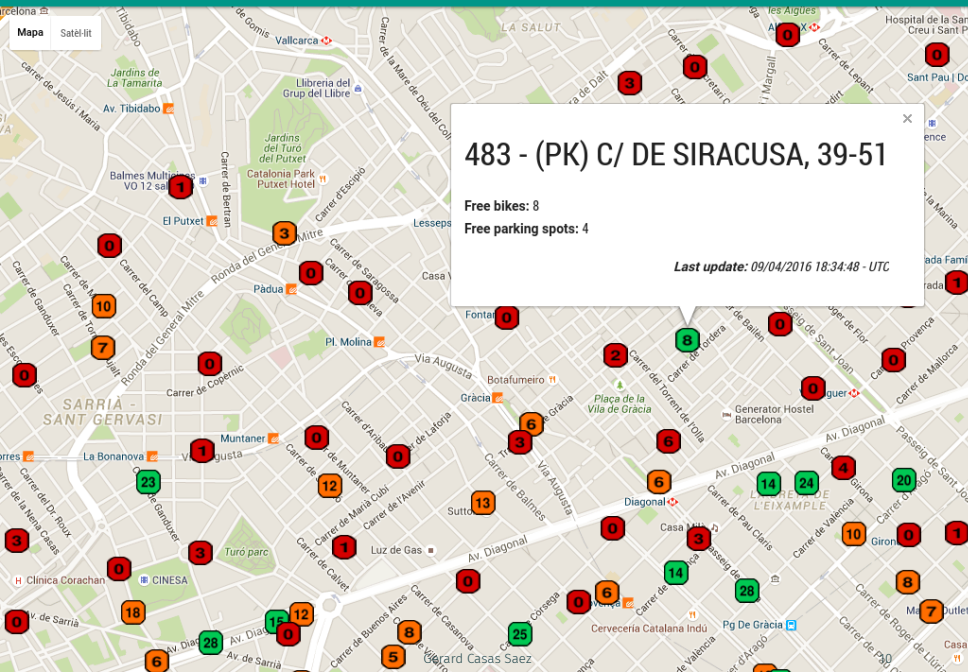
CITIES INCLUDED

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



Mapa

Satèl·lit

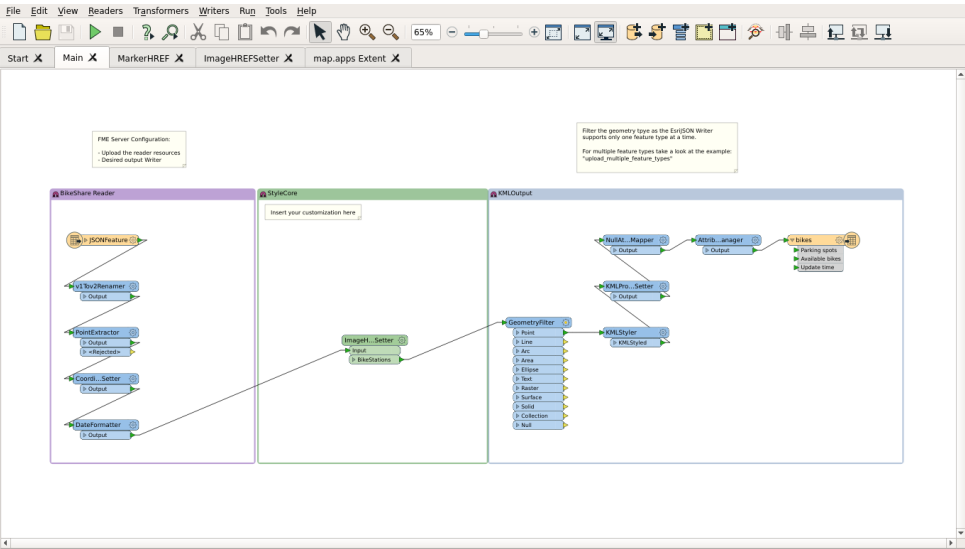


483 - (PK) C/ DE SIRACUSA, 39-51

Free bikes: 8

Free parking spots: 4

Last update: 09/04/2016 18:34:48 - UTC



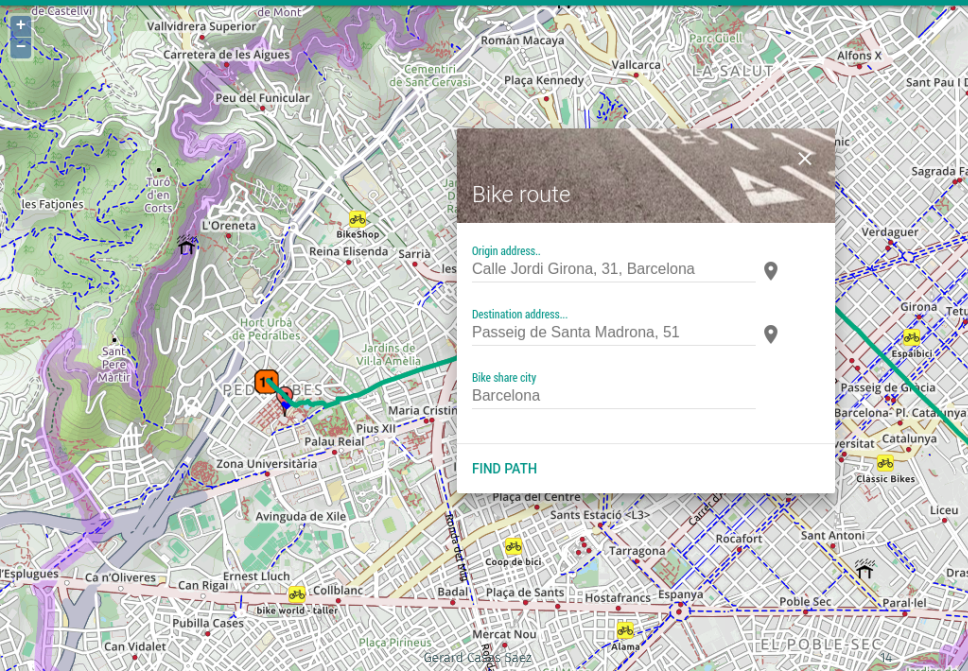
BIKE ROUTING

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 route

Origin address...

Calle Jordi Girona, 31, Barcelona



Destination address...

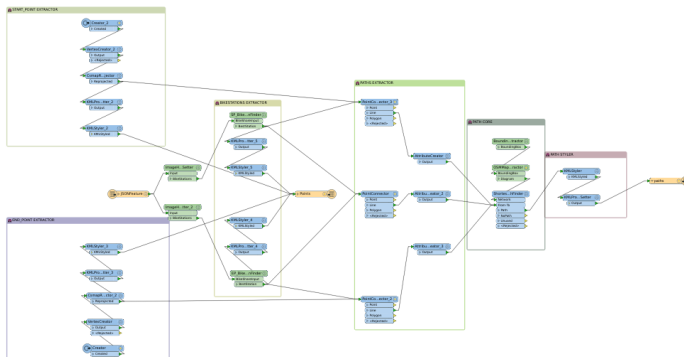
Passeig de Santa Madrona, 51



Bike share city

Barcelona

FIND PATH



ROUTE DOWNLOAD

FME Workspace:

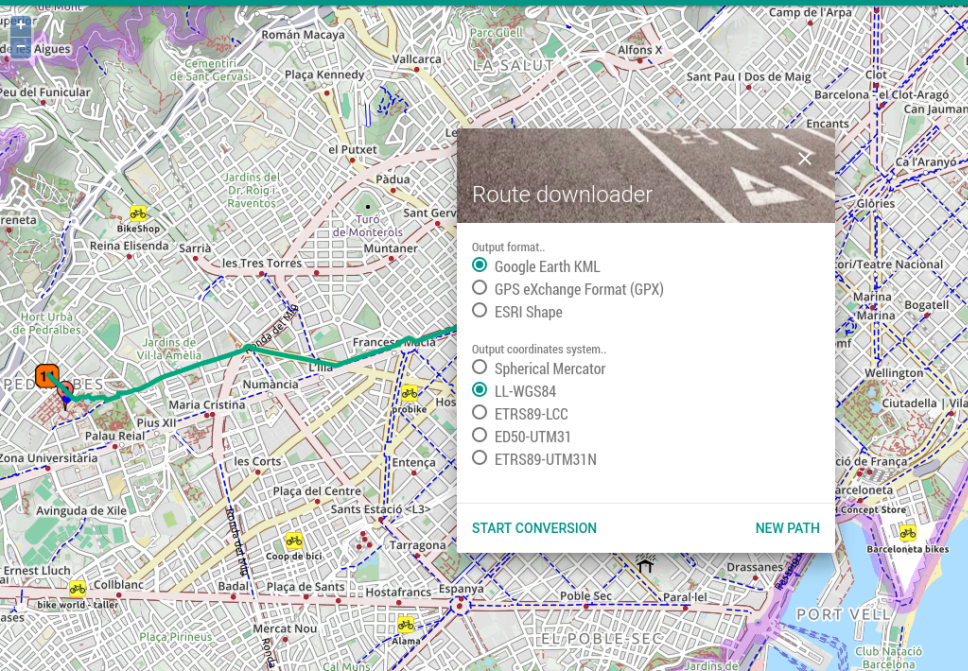
- Format conversion from KML
- Coordinate system conversion

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

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.



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QUESTIONS?

Thanks for listening! :D

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