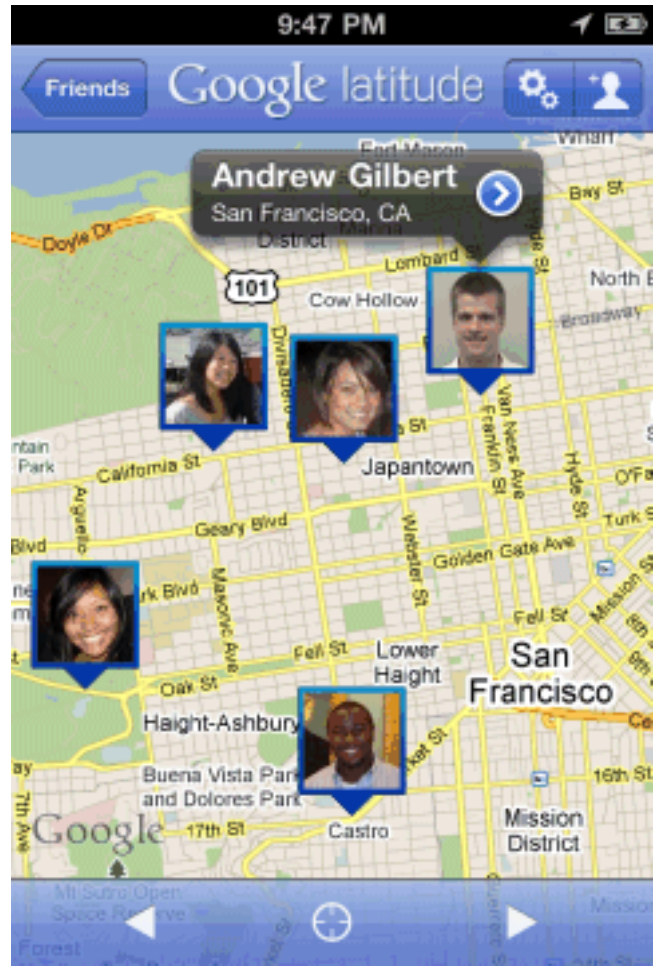
The Story of **OwnTracks**

Jan-Piet Mens
November 2018
@jpmens

`@jpmens`: consultant, part-time admin, trainer, small-scale fiddler, loves **plain text**, and things which **work**. Contributes to Ansible, dreamed up **OwnTracks**, chases software bugs, and it's often not a DNS problem.

Once upon a time …

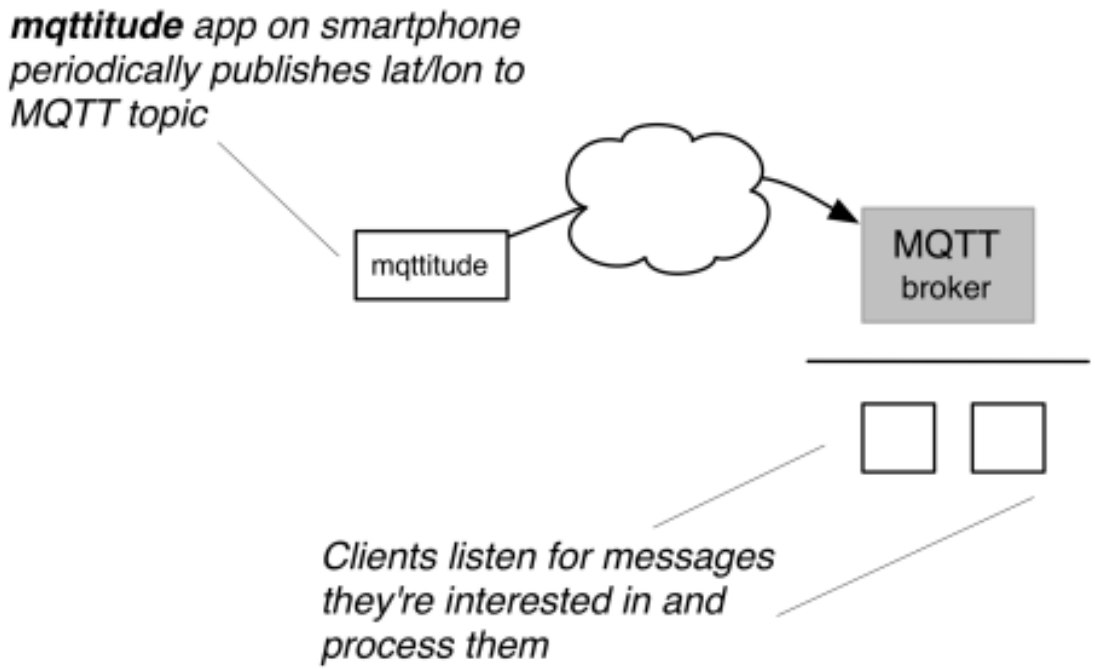


http://googlesystem.blogspot.de/2010/12/google-latitude-app-for-iphone.html

Their **big** data


```
{
  "features": [
    {
      "properties": {
        "placardHeight": 59,
        "placardWidth": 56,
        "id": "-8307528510653225244",
        "accuracyInMeters": 1414,
        "timeStamp": 1338351805,
        "reverseGeocode": "Friedrichsdorf, Germany",
        "photoUrl": "http://www.google.com/latitude/apps/badge/api?type=photo&photo=nkj-
mzcBAAA.dxs397bzbO1k\nl-Dgy0qFIg.vWW5zvcxLgY3uaJrvEZnJA",
        "photoWidth": 96,
        "photoHeight": 96,
        "placardUrl": "http://www.google.com/latitude/apps/badge/api?type=photo_placard&photo=nkj-
mzcBAAA.dx\ns397bzbO1kl-Dgy0qFIg.vWW5zvcxLgY3uaJrvEZnJA&moving=true&stale=true&lod=1&format=png"
      },
      "geometry": {
        "coordinates": [
          8.65486,
          50.238862
        ],
        "type": "Point"
      },
      "type": "Feature"
    }
  ],
  "type": "FeatureCollection"
}
```

A crazy idea …



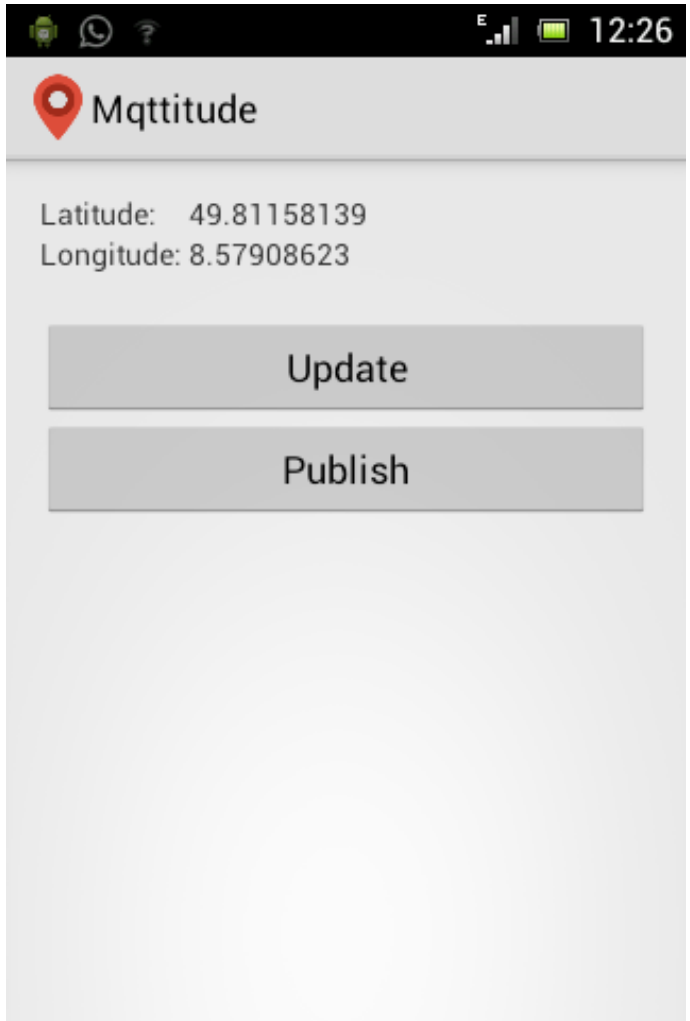
Privacy, Security, Easy data

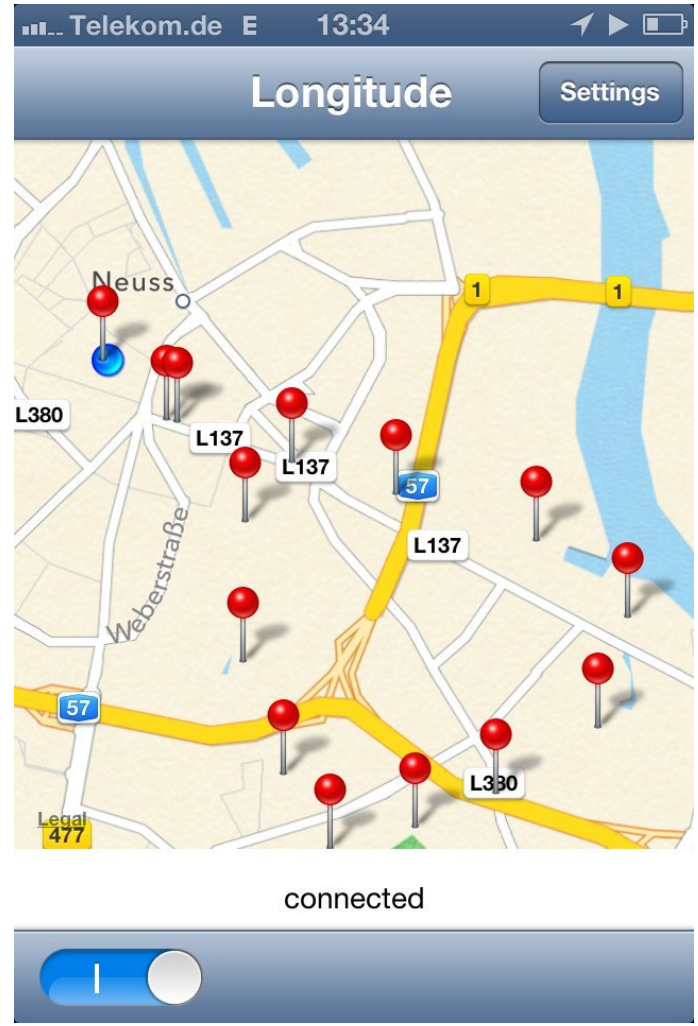
and the **apps**?

Christoph Krey

Alexander Rust

… MQTTitude


12:26
Mqttitude
Latitude: 49.81158139
Longitude: 8.57908623
Update
Publish


Telekom.de E 13:34
Longitude
Settings
Neuss
L380
L137
L137
L137
57
Weberstraße
57
L380
Legal
477
connected

#getrichfast

MQTT **what?!**

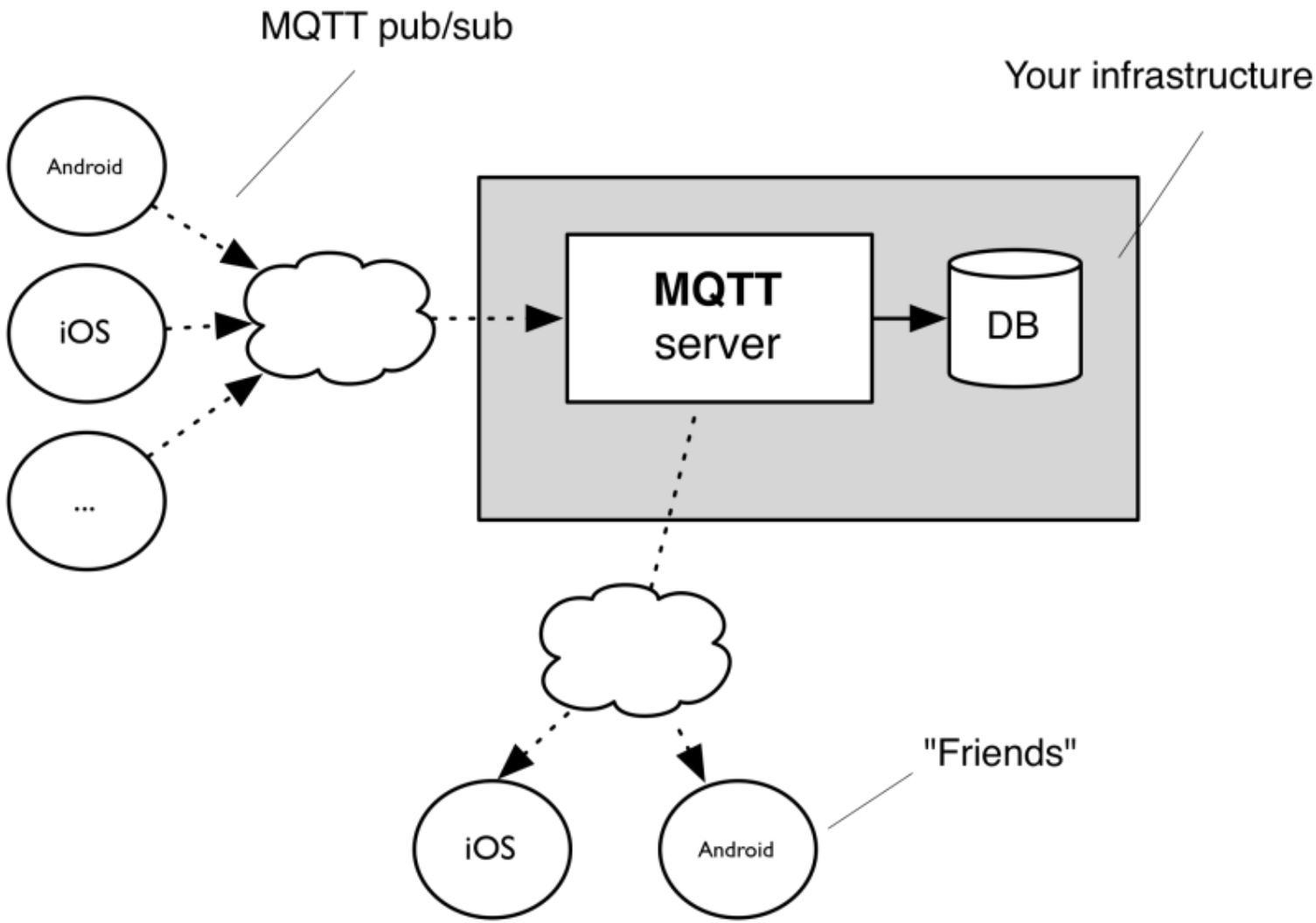
We've decided to opt for a less geeky name. MQTTitude becomes OwnTracks. // You don't have to re-follow us -- you're doing that already. :-)

@OwnTracks sigh. The geeky name had attitude. This one is bland. Please revert commit…

@OwnTracks I don't know if a latitude-type service can ever be... less geeky :-) love the name!

@OwnTracks Like the new name ...

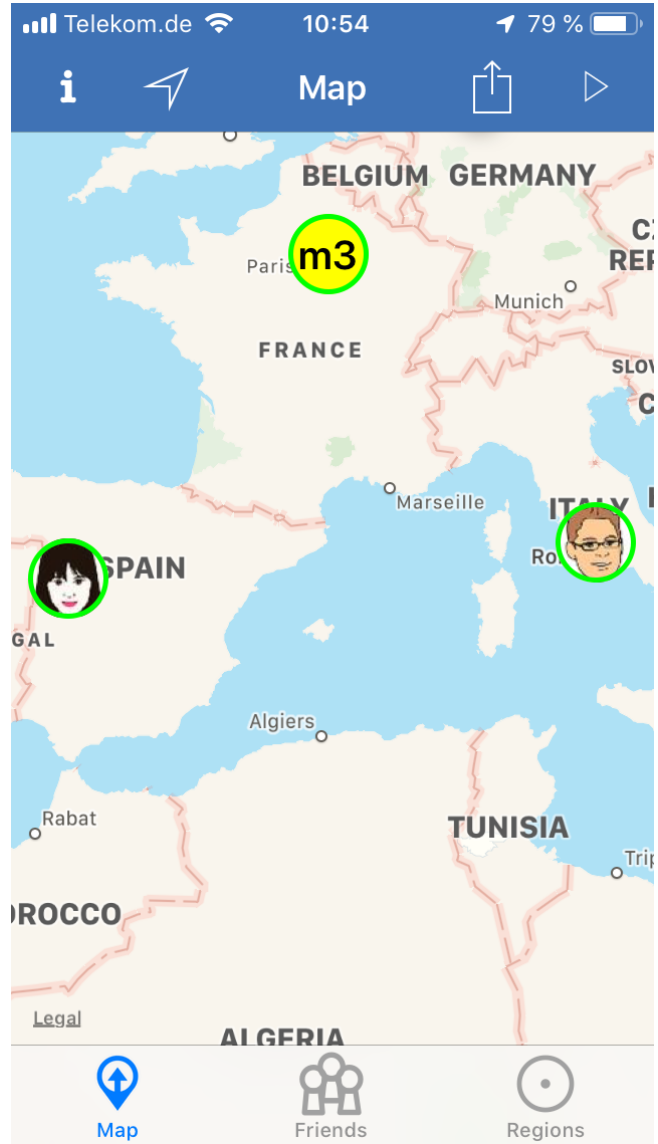
Your own infra



our data: **JSON**


```
{
  "_type": "location",
  "batt": 21,
  "lat": 48.85833,
  "t": "m",
  "lon": 3.29513,
  "acc": 5,
  "tid": "JJ",
  "vel": 8,
  "cog": 143,
  "alt": 143,
  "tst": 1540285680
}
```

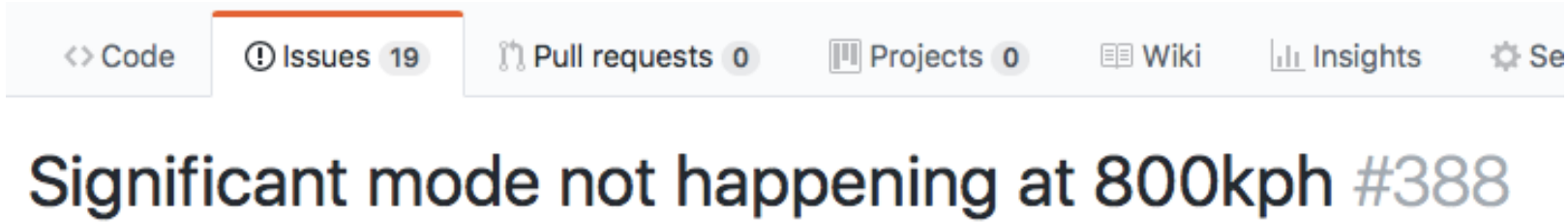
Our apps today



MQTT for iOS?

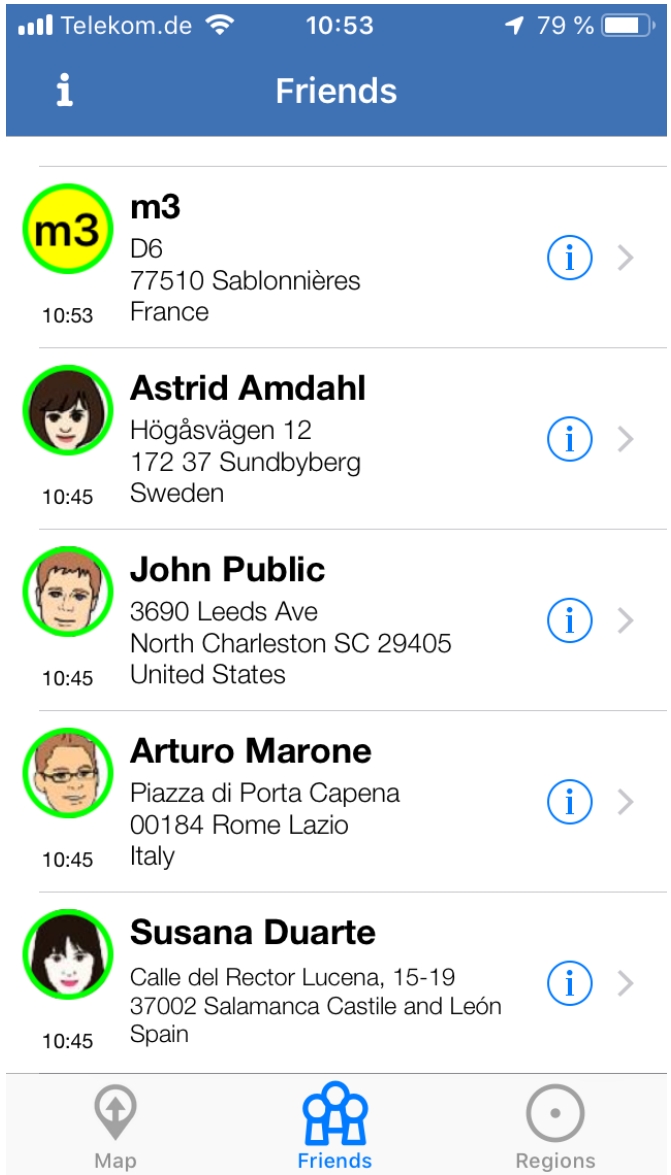
libmosquitto	MQTTKit	MqttSDK	MQTTClient
3.1.1	3.1	3.1	3.1.1
libmosquitto	libmosquitto	native	native
(openssl)		CFNetwork	CFNetwork
socket	socket		

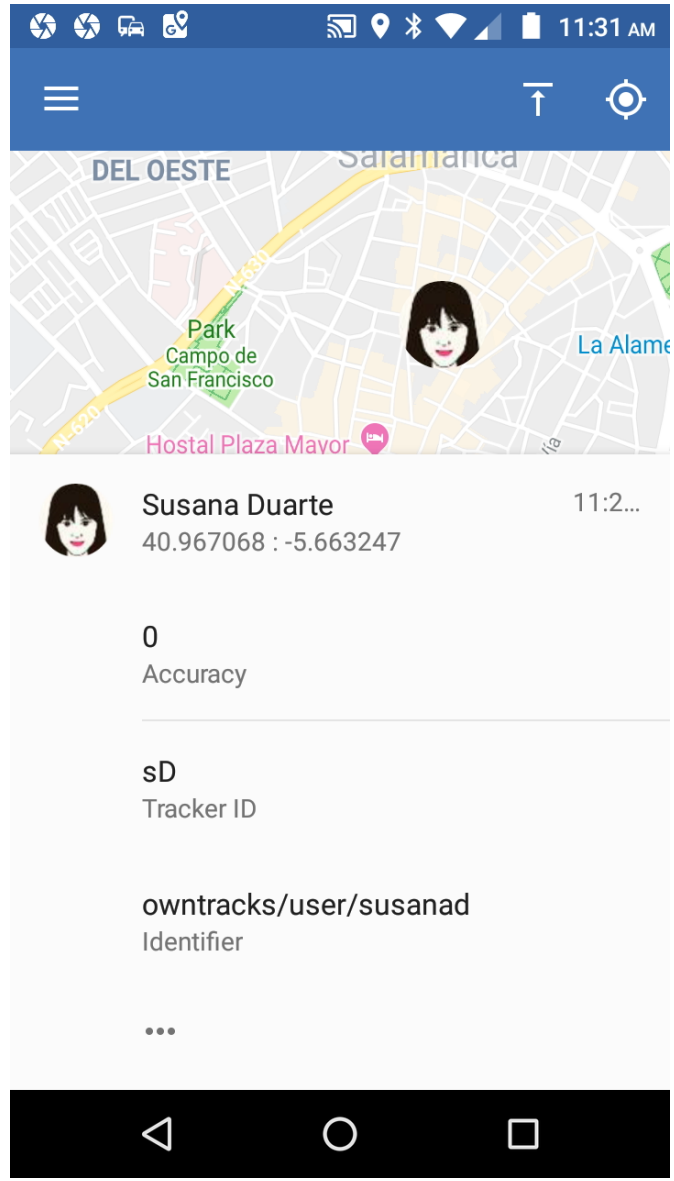
Bugs, bugs, **more** bugs



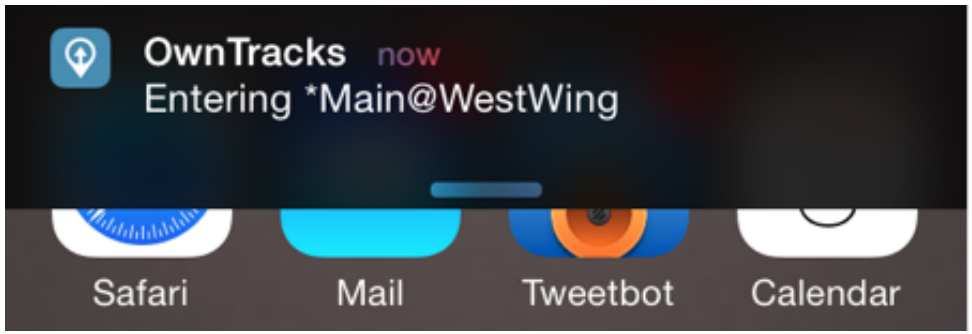
As anybody who does so can attest to, Open Source can be fun and *interesting*.

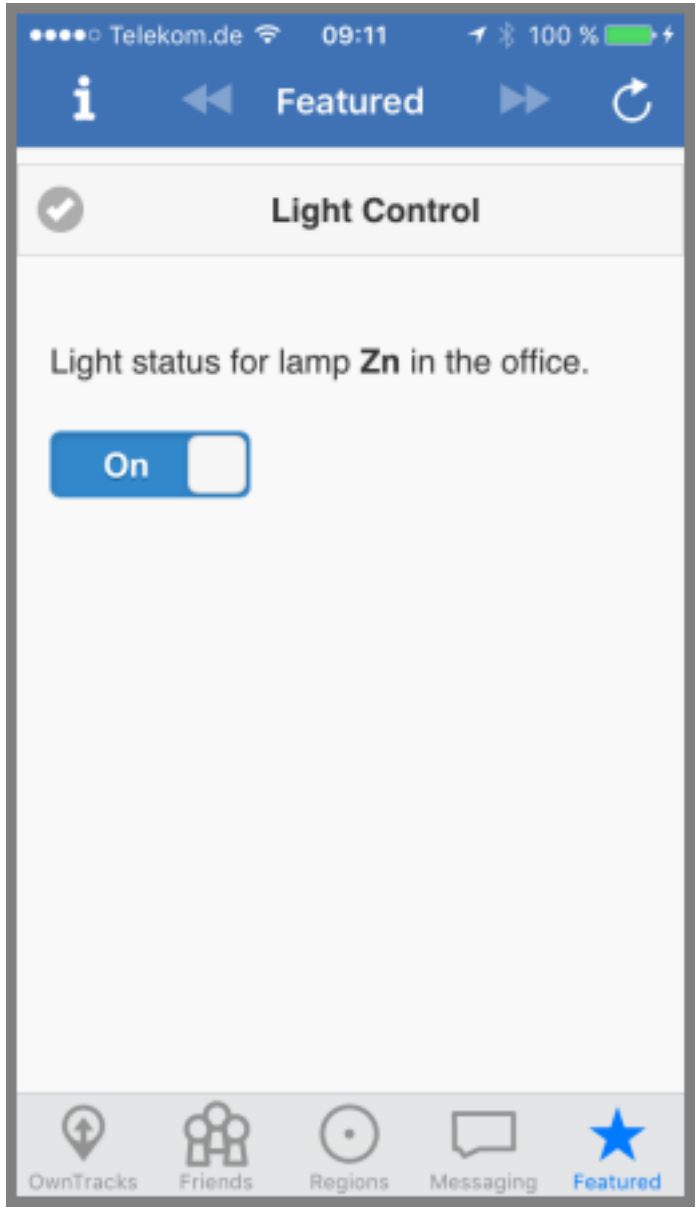
Los **amigos**


Telekom.de
10:53
79 %
Friends
m3
D6
77510 Sablonnières
France
10:53
Astrid Amdahl
Högåsvägen 12
172 37 Sundbyberg
Sweden
10:45
John Public
3690 Leeds Ave
North Charleston SC 29405
United States
10:45
Arturo Marone
Piazza di Porta Capena
00184 Rome Lazio
Italy
10:45
Susana Duarte
Calle del Rector Lucena, 15-19
37002 Salamanca Castile and León
Spain
10:45
Map
Friends
Regions


11:31 AM
DEL OESTE
Park
Campo de
San Francisco
Hostal Plaza Mayor
Susana Duarte
11:2...
40.967068 : -5.663247
0
Accuracy
sD
Tracker ID
owntracks/user/susanad
Identifier

we call them **features**





Jan-Piet Mens

jpm 03-Jun 14:42:00Z

Jane Jolie

jjolie 03-Jun 11:55:20Z

Christoph Krey

cky 03-Jun 08:43:40Z

HTT-what?

```php
<?php
    # Obtain the JSON payload from an OwnTracks app POSTed via HTTP
    # and insert into database table.

    header("Content-type: application/json");

    $payload = file_get_contents("php://input");
    $data =  @json_decode($payload, true);

    if ($data['_type'] == 'location') {

        # CREATE TABLE locations (dt TIMESTAMP, tid CHAR(2), lat DECIMAL(9,6), lon DECIMAL
        $mysqli = new mysqli("127.0.0.1", "user", "password", "database");

        $tst = $data['tst'];
        $lat = $data['lat'];
        $lon = $data['lon'];
        $tid = $data['tid'];

        # Convert timestamp to a format suitable for mysql
        $dt = date('Y-m-d H:i:s', $tst);

        $sql = "INSERT INTO locations (dt, tid, lat, lon) VALUES (?, ?, ?, ?)";
        $stmt = $mysqli->prepare($sql);
        # bind parameters (s = string, i = integer, d = double,  b = blob)
        $stmt->bind_param('ssdd', $dt, $tid, $lat, $lon);
        $stmt->execute();
        $stmt->close();
    }

    $response = array();
    # optionally add objects to return to the app (e.g.
    # friends or cards)
    print json_encode($response);
?>
```

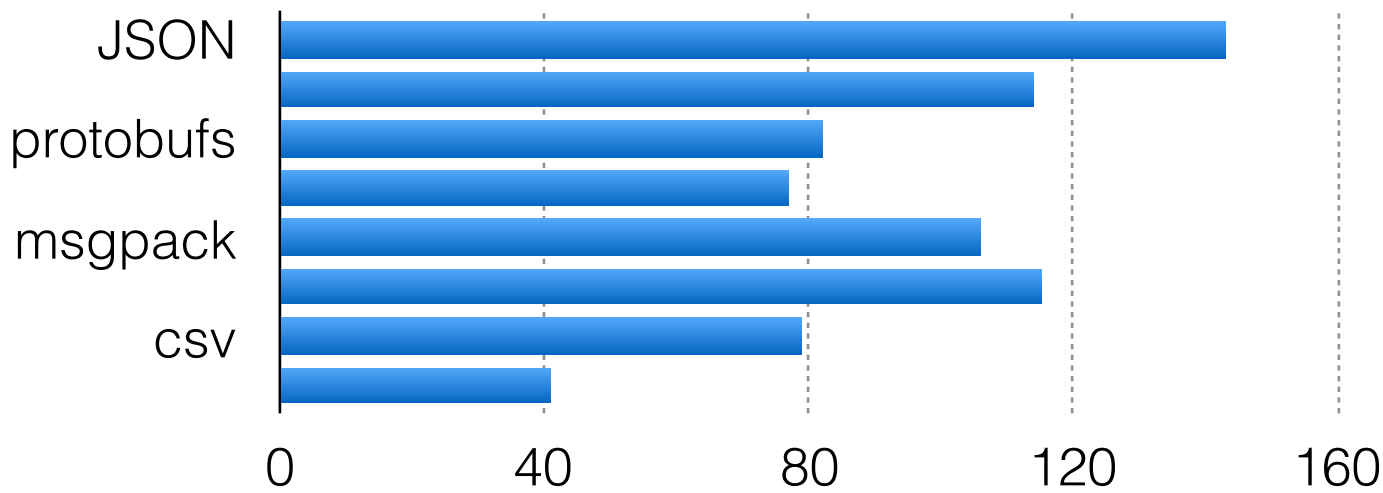
In a **vehicle**?

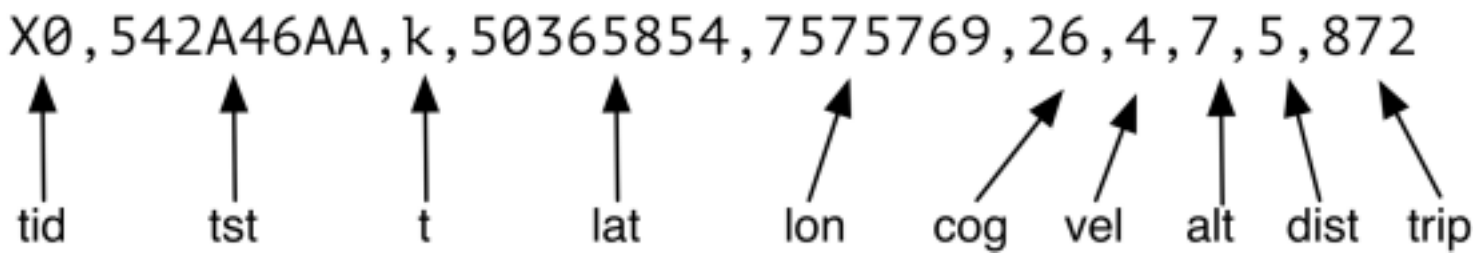
Ha, ha, ha, ha. **No**.

For **vehicles**!

to pack or not to pack


```
{„_type":"location","t":"L","tid":"C2","tst":"1413805066","lon":"13.5
32628","lat":"52.432363","cog":0,"vel":0,"alt":30,"dist":0,"trip":0}
```

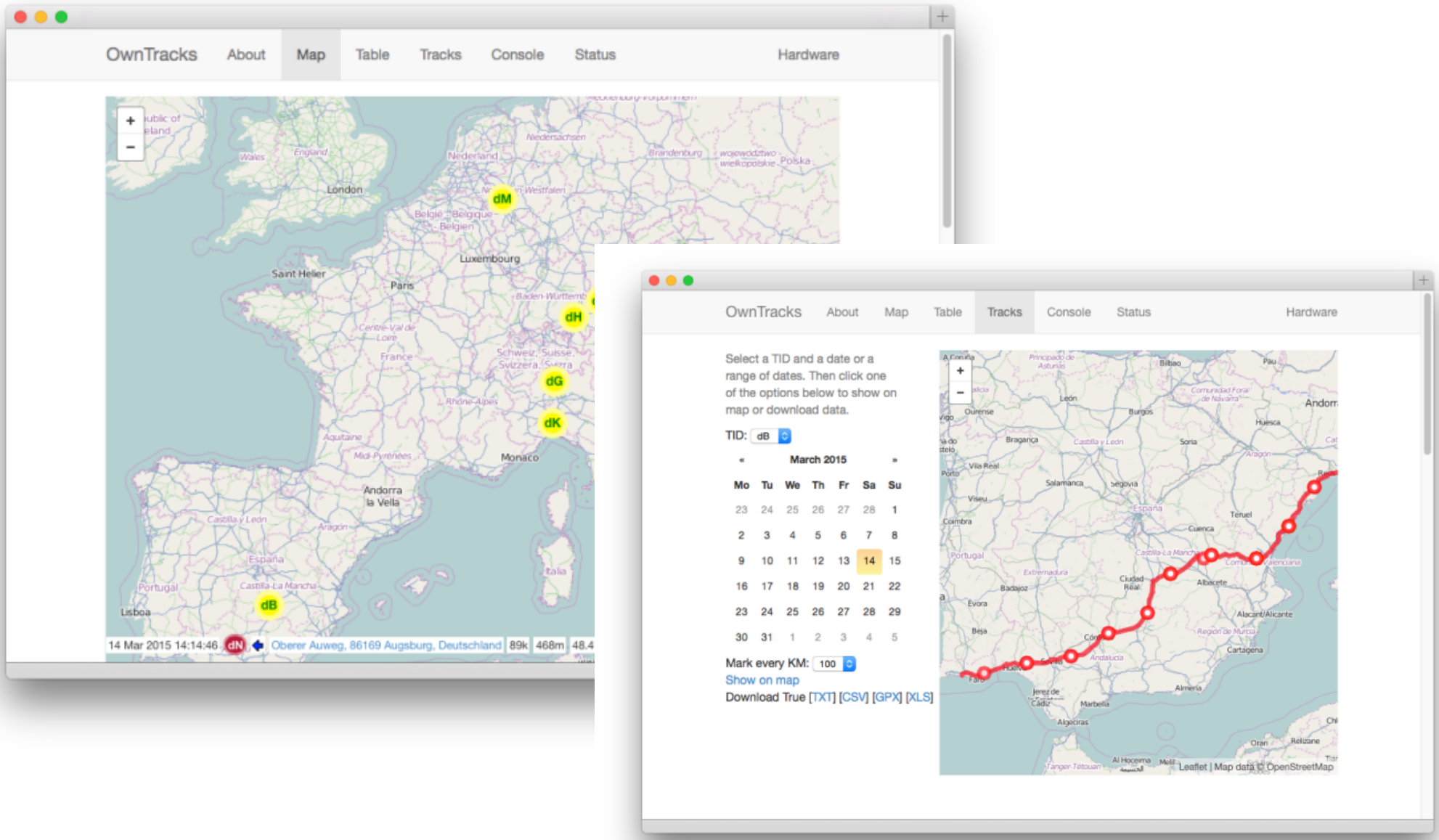


SIM **cards**

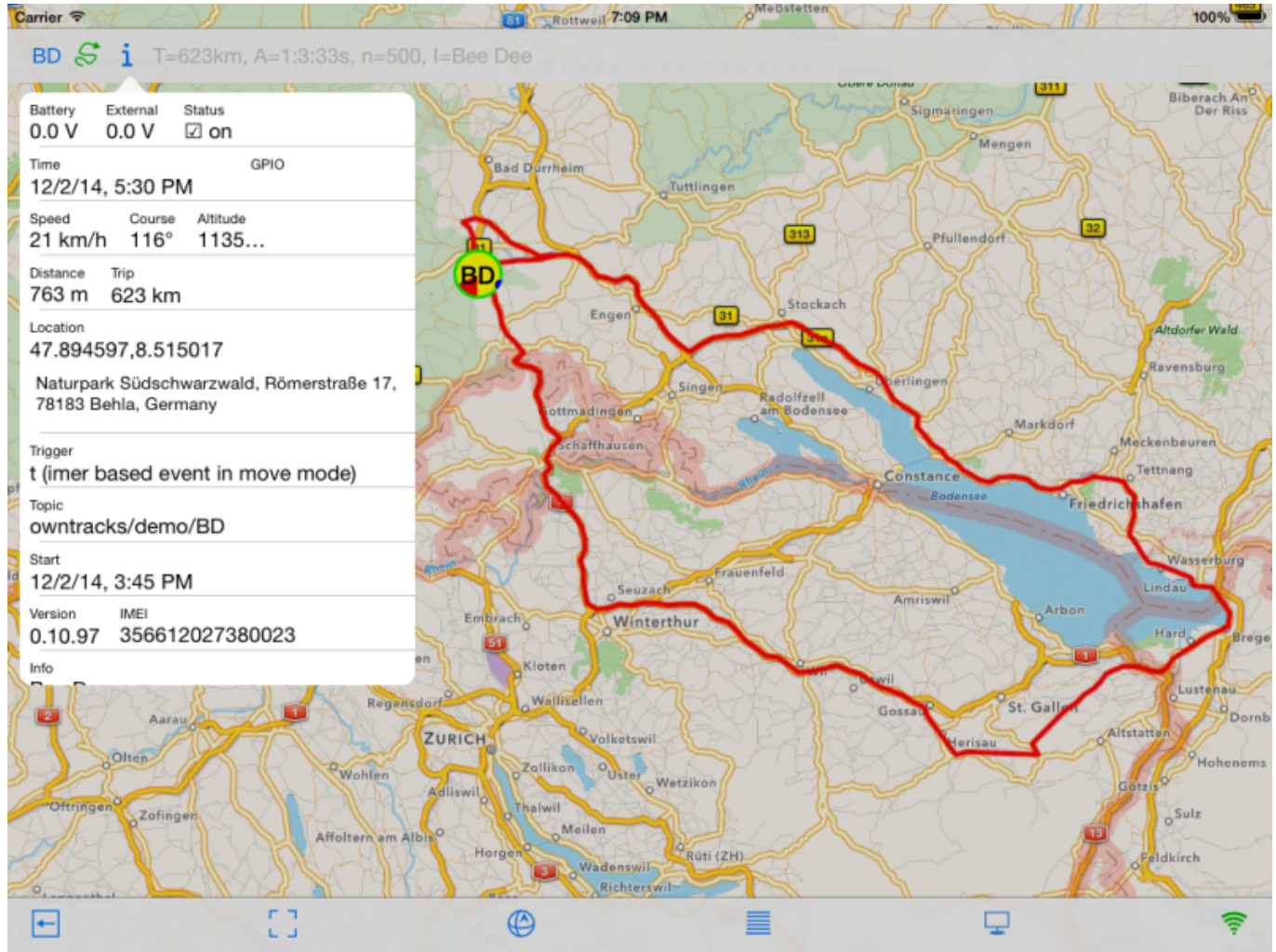
Roaming
Roaming
Roaming

Did I say "**roaming**"?

Pista is born

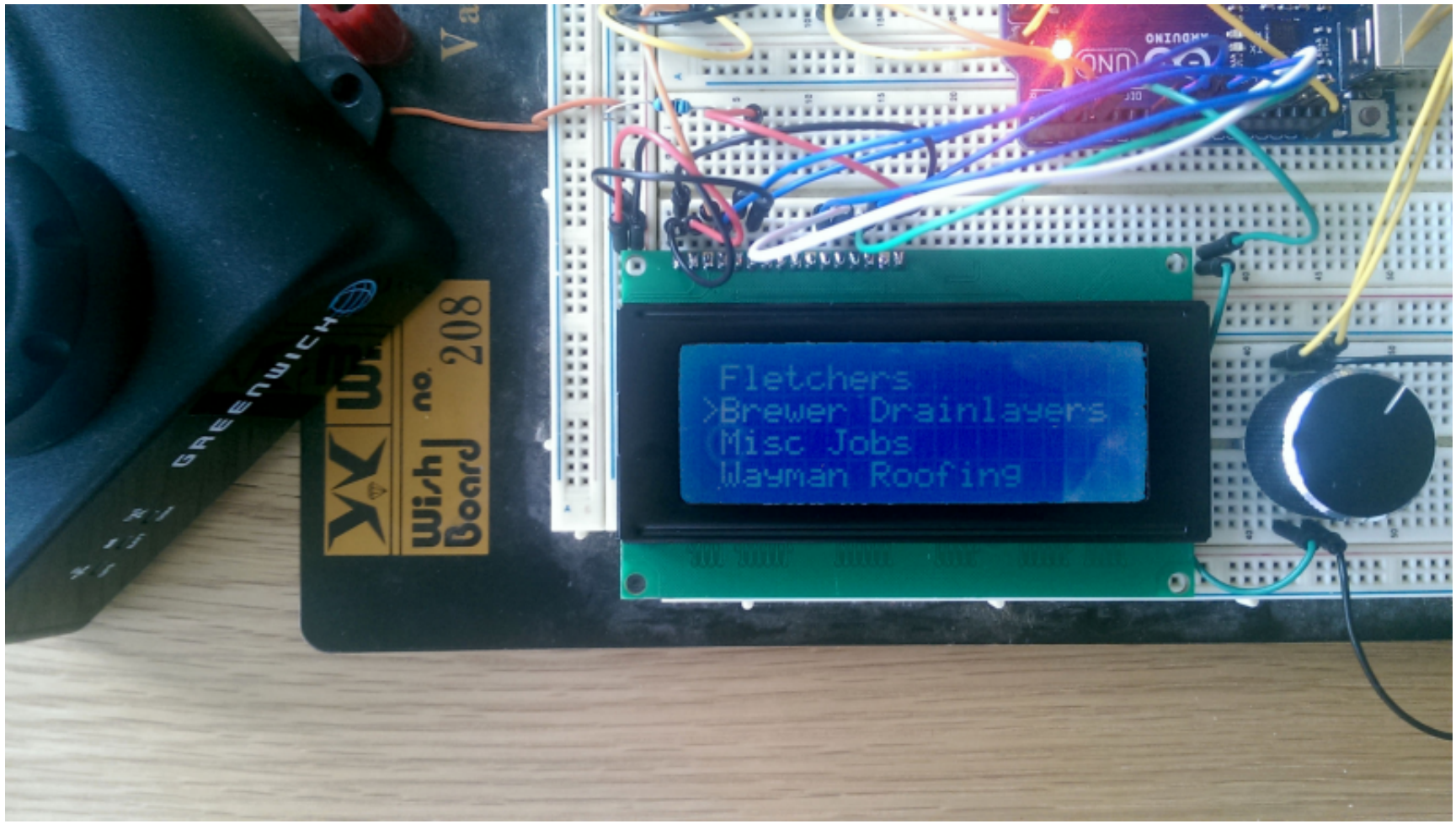


CTRL for Greenwich



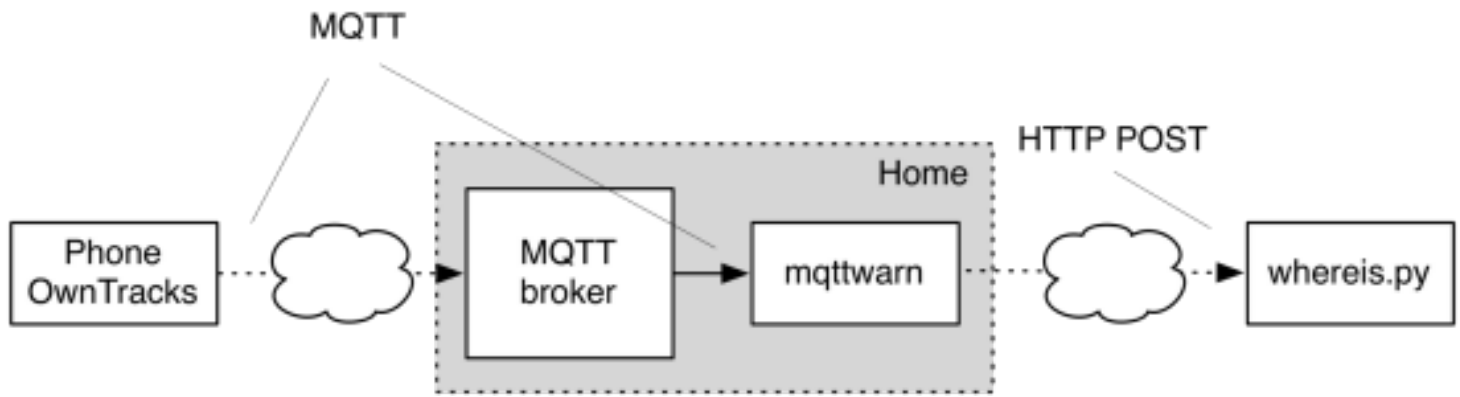
iOS front-end (by Christoph), Python back-end

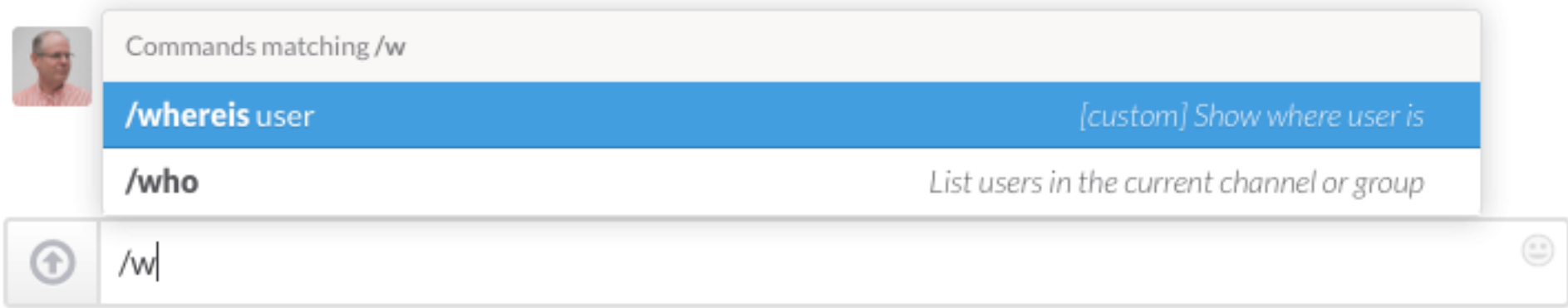
UI? really? **Proxy!**



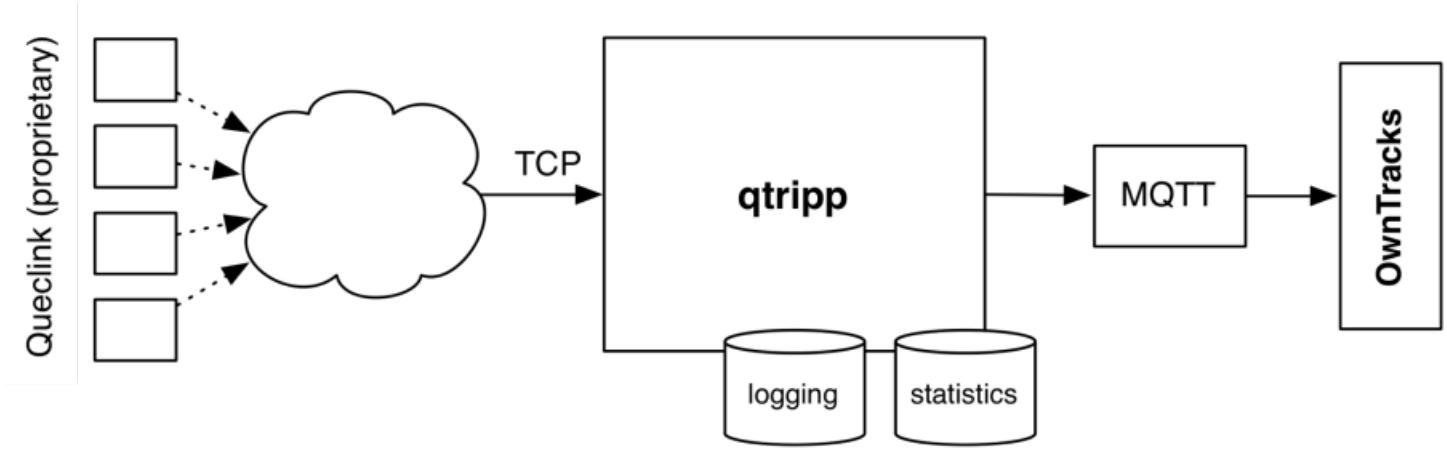
by Ben Jones (`@SumnerBoy`)

Own ideas


MQTT
HTTP POST
Home
Phone
OwnTracks
MQTT
broker
mqttwarn
whereis.py


Commands matching /w
/whereis user
[custom] Show where user is
/who
List users in the current channel or group
/w

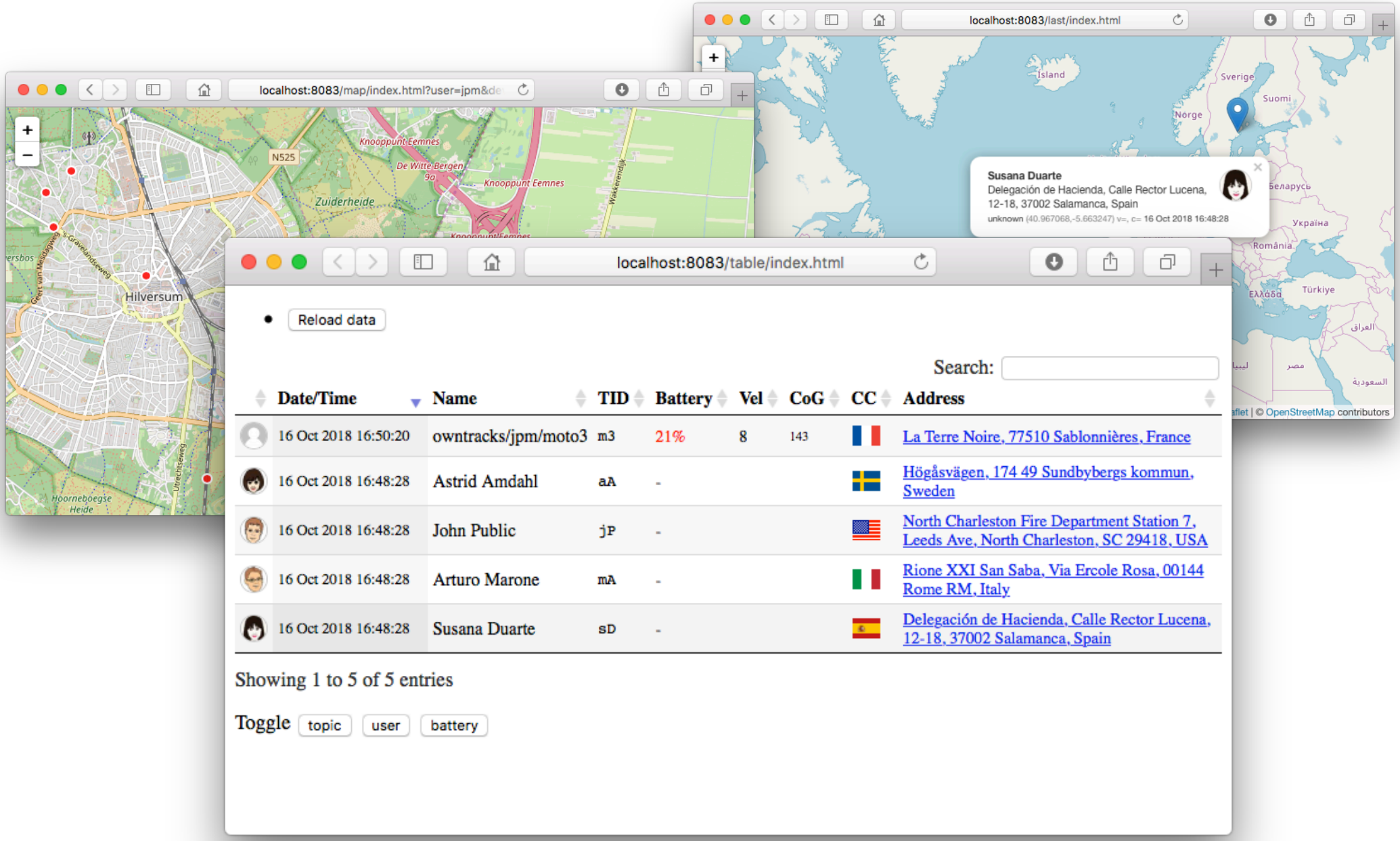
Own **vehicles**



Smaller
Cheaper
More Reliable

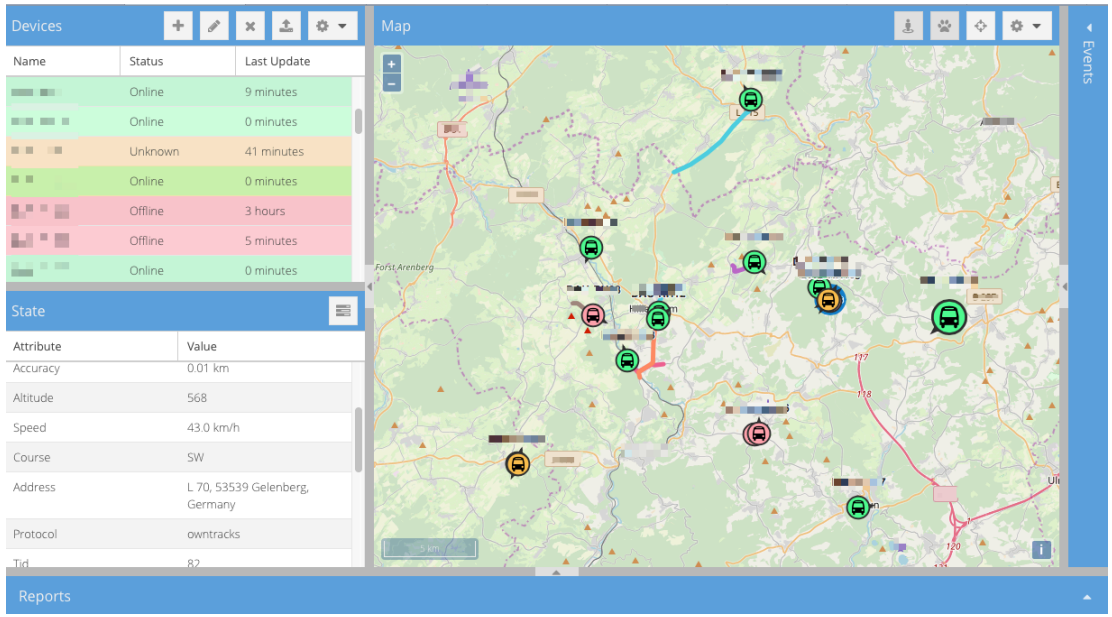
our code is FLOSS

Recorder

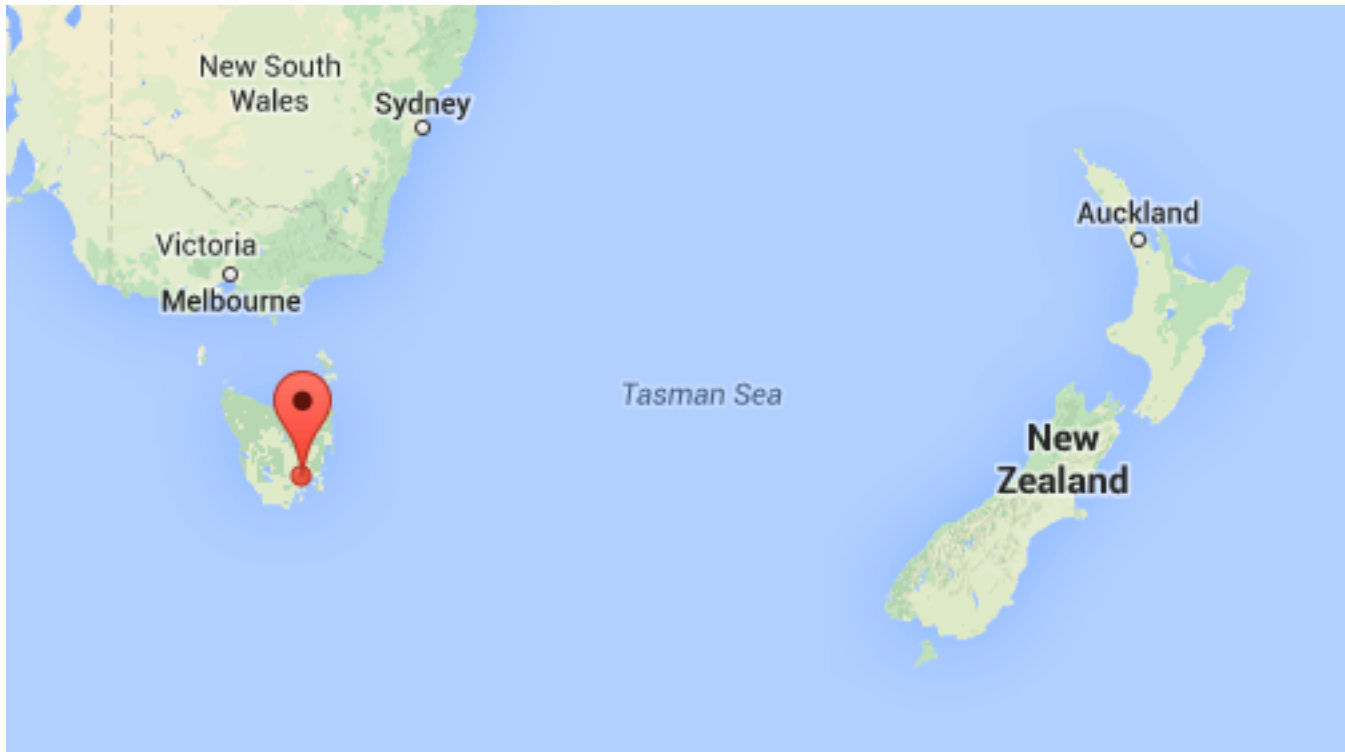

localhost:8083/last/index.html
Susana Duarte
Delegación de Hacienda, Calle Rector Lucena, 12-18, 37002 Salamanca, Spain
unknown (40.967068,-5.663247) v=, c= 16 Oct 2018 16:48:28
localhost:8083/map/index.html?user=jpm&de
Hilversum
Zuiderheide
localhost:8083/table/index.html
Reload data
Search:
Date/Time
Name
TID
Battery
Vel
CoG
CC
Address
16 Oct 2018 16:50:20
owntracks/jpm/moto3
m3
21%
8
143
La Terre Noire, 77510 Sablonnières, France
16 Oct 2018 16:48:28
Astrid Amdahl
aA
-
Högåsvägen, 174 49 Sundbybergs kommun, Sweden
16 Oct 2018 16:48:28
John Public
jP
-
North Charleston Fire Department Station 7, Leeds Ave, North Charleston, SC 29418, USA
16 Oct 2018 16:48:28
Arturo Marone
mA
-
Rione XXI San Saba, Via Ercole Rosa, 00144 Rome RM, Italy
16 Oct 2018 16:48:28
Susana Duarte
sD
-
Delegación de Hacienda, Calle Rector Lucena, 12-18, 37002 Salamanca, Spain
Showing 1 to 5 of 5 entries
Toggle
topic
user
battery

Ecosystem

openHAB
Home Assistant
Traccar
…



World wide



I once blogged that that was the farthest away OwnTracks user; wrong: it's Ben in NZ of course.

owntracks.org

@owntracks