

T U C

Trotinetes Universitárias Conectadas

Orientador

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49984 Projeto de Engenharia Informática

Metrado Integrado em Engenharia de Computadores e Telemática

Mapa do campus da Universidade de Aveiro



Soluções limitadas

MERCADO

- Não permite o uso do cartão da UA
- Uma trotinete por pessoa
- Necessidade de construção de docks
- Custos elevados

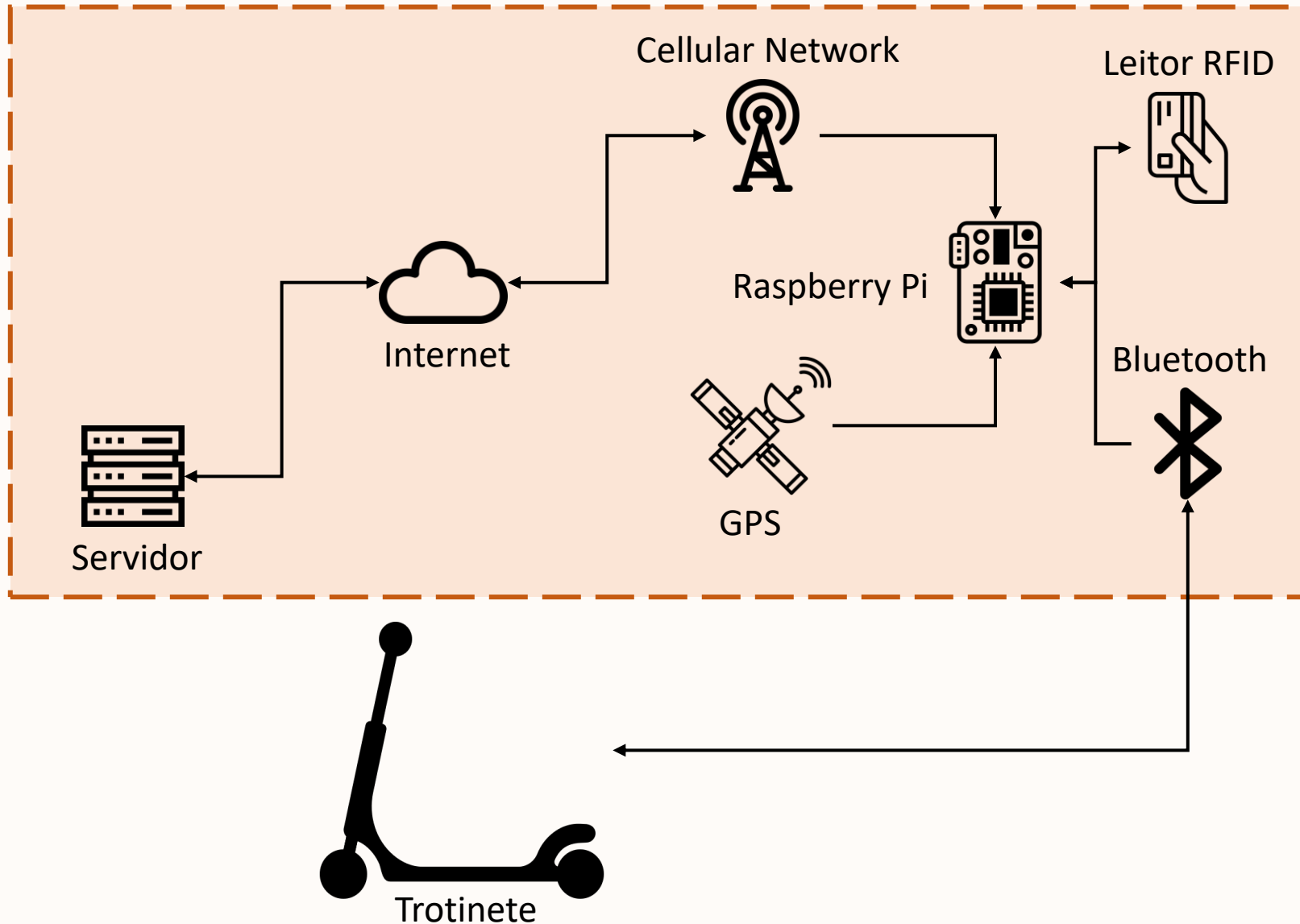
TUC

- Permite o uso do cartão da UA
- Partilha de trotinetes
- Custos reduzidos

Seleção da trotinete

	XIAOMI M365	Segway ES1	XIAOMI M365 Pro
AUTONOMIA	30 km	25km	45km
CUSTO	399€	449€	499€
BLUETOOTH	Sim	Sim	Sim
TRAVÃO	Disco c/ ABS	S/ Disco	Disco c/ ABS
PNEUS	Pneumático	Rígidos	Pneumático

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Hardware

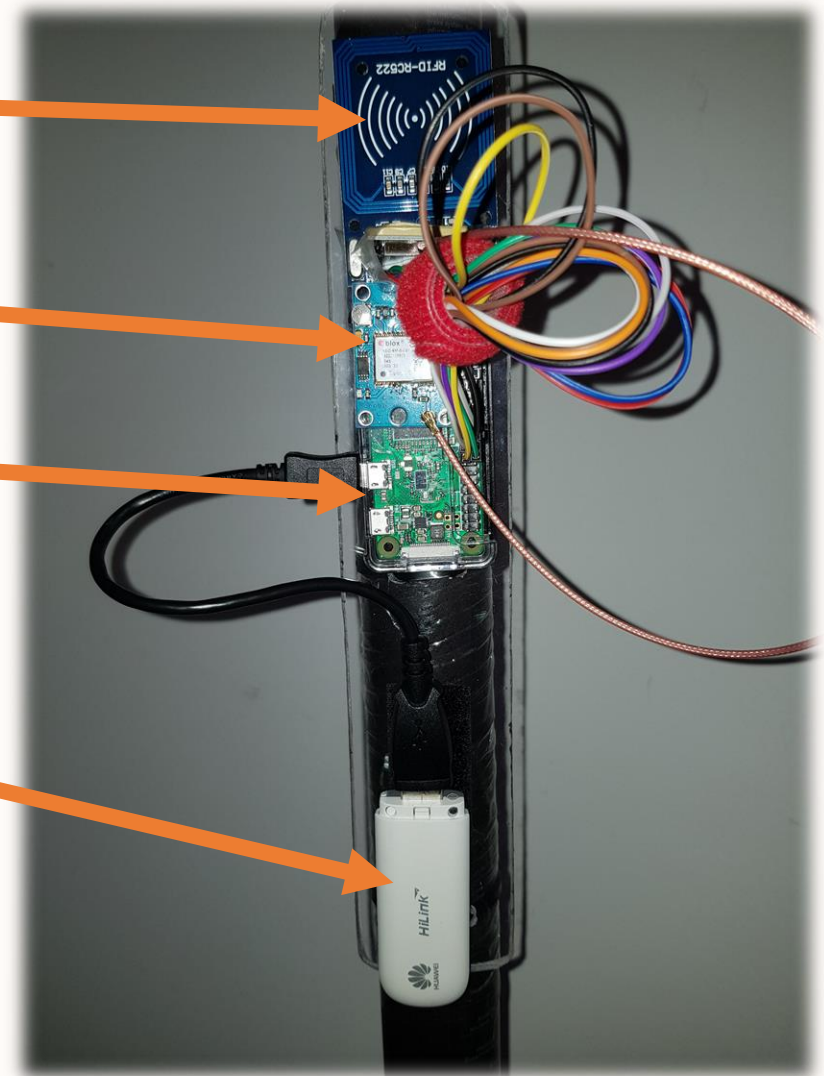
Leitor RFID - RC522
0.76€

GPS - NEO-6m
25.70€

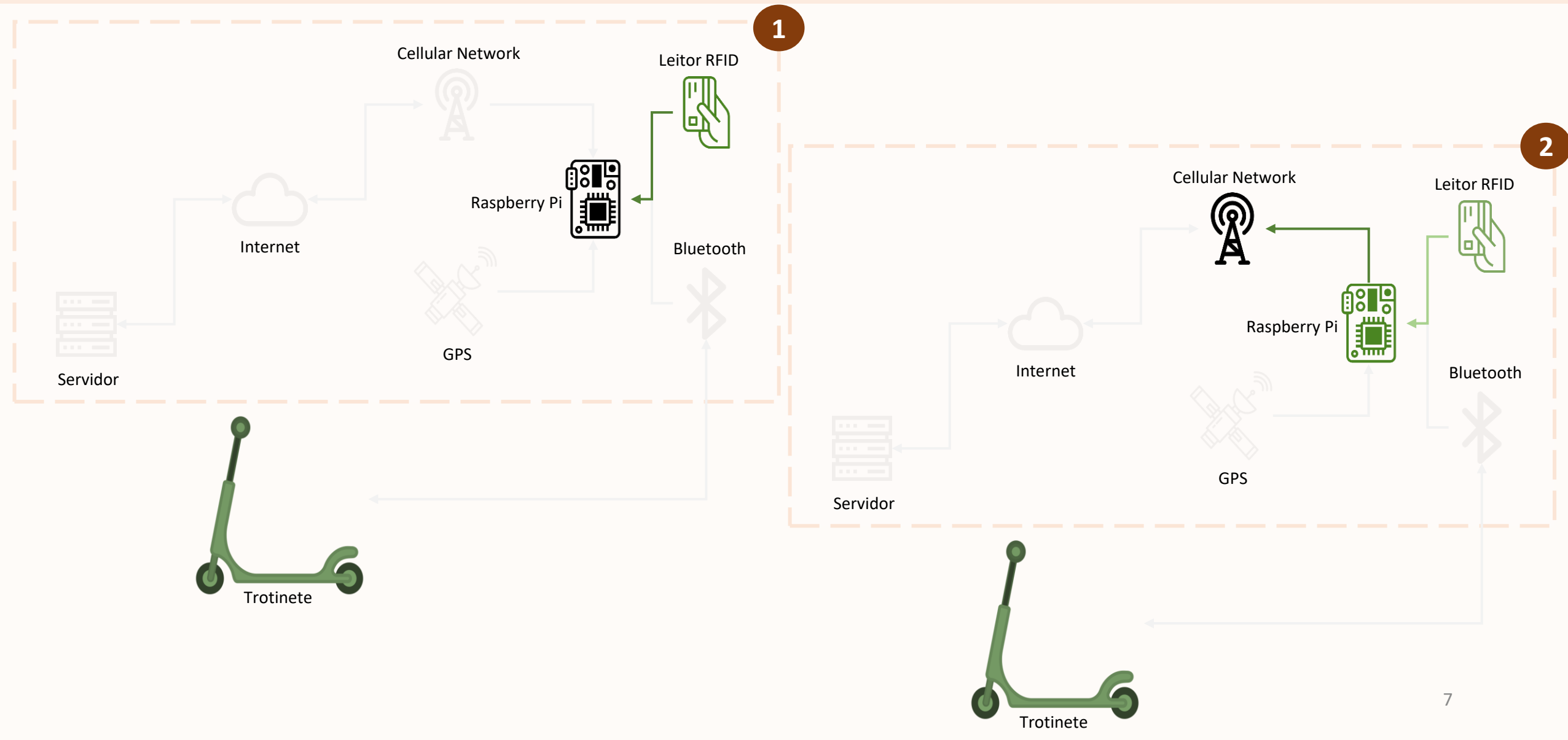
Raspberry Pi zero W
10.44€

Huawei E3131
16.55€

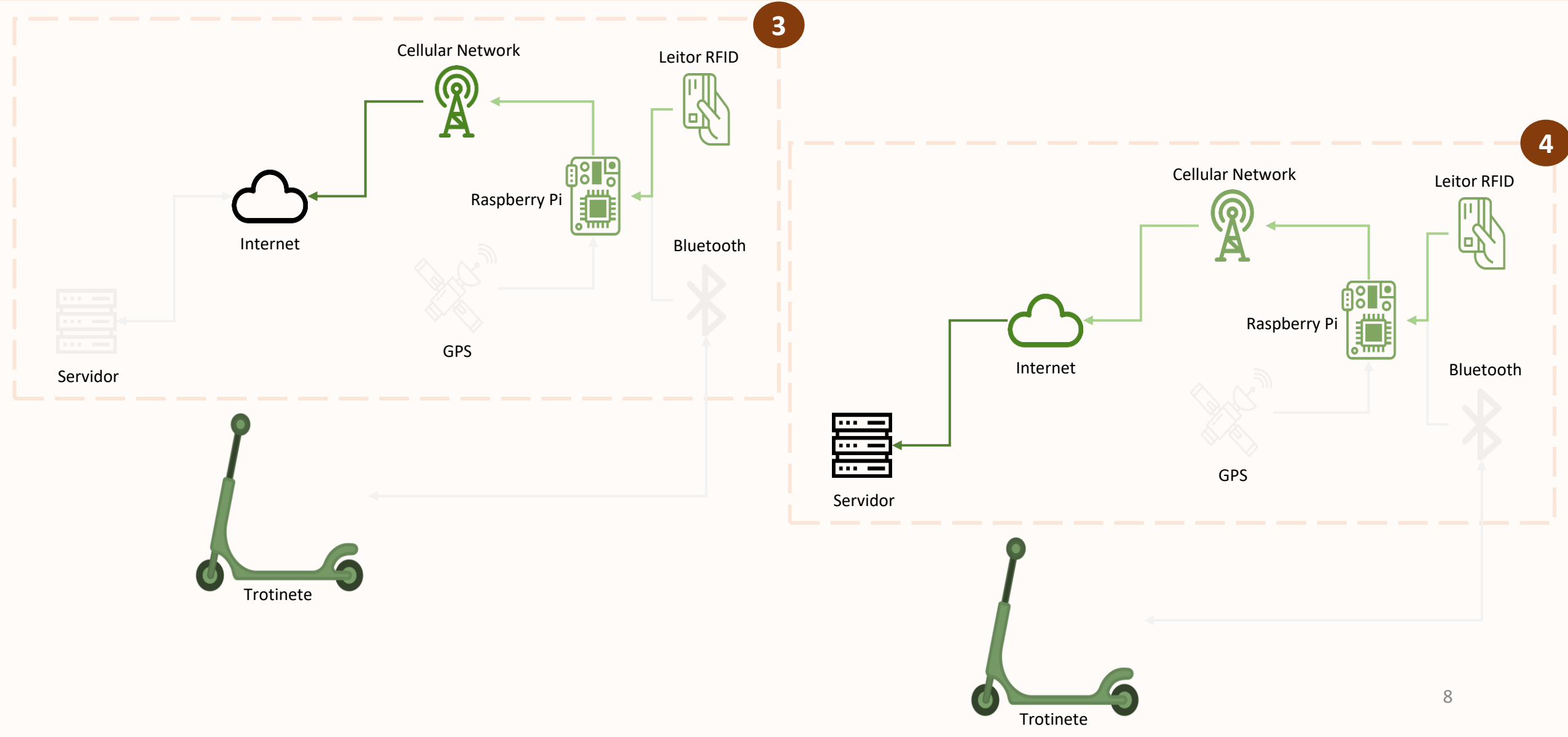
- Consumo = 2.07W (5.05V * 0.41A)
- 19 horas em standby sem ter que ser carregada
- Custo Total (399+60) = 460€ por trotinete excluindo o contrato de operadora para dados móveis



Exemplo de troca de mensagens

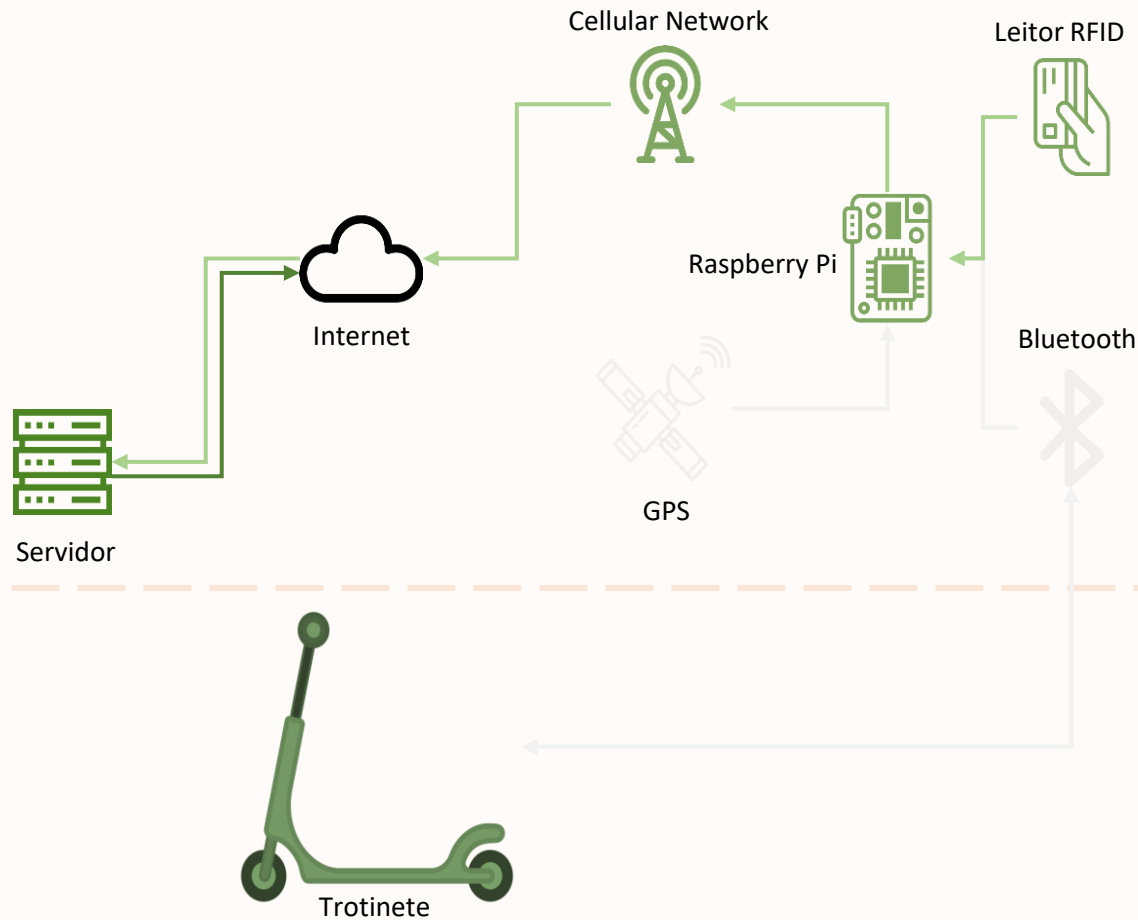


Exemplo de troca de mensagens

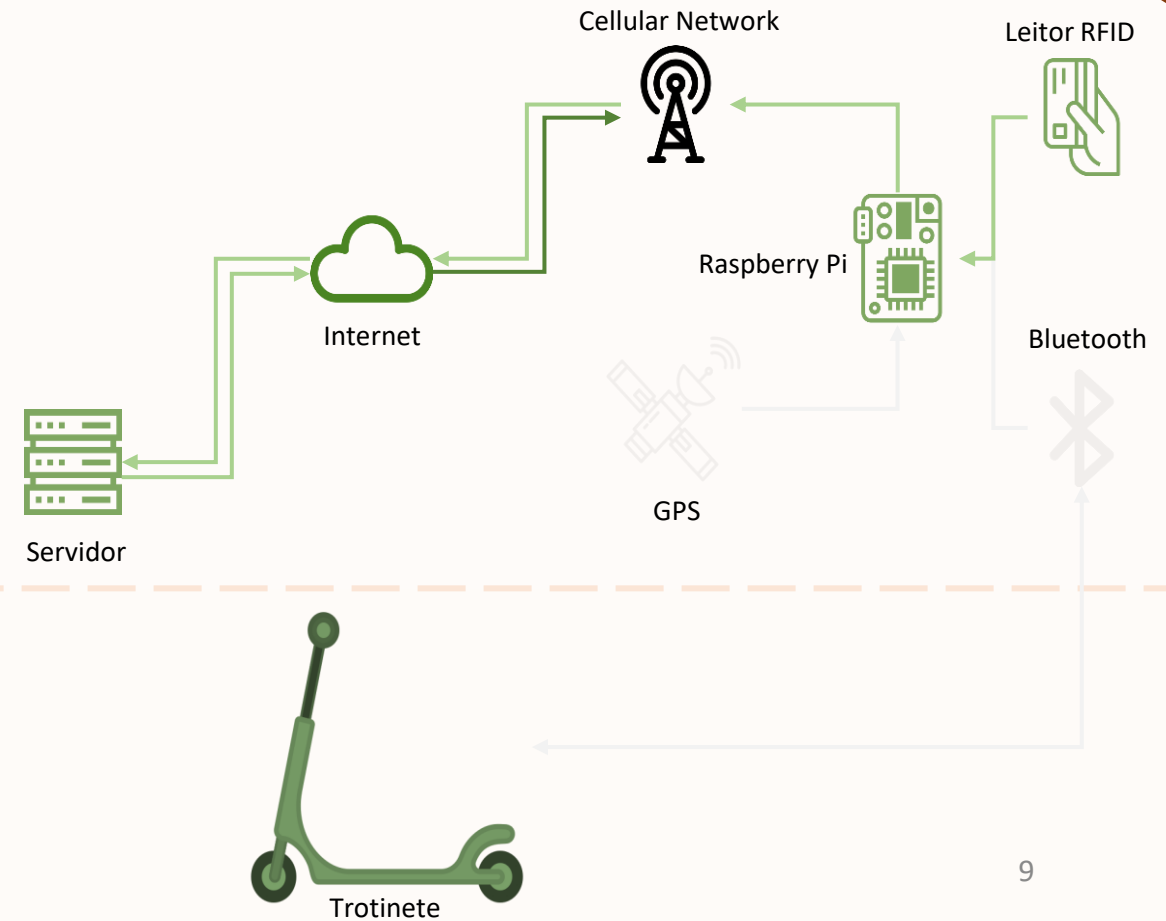


Exemplo de troca de mensagens

5

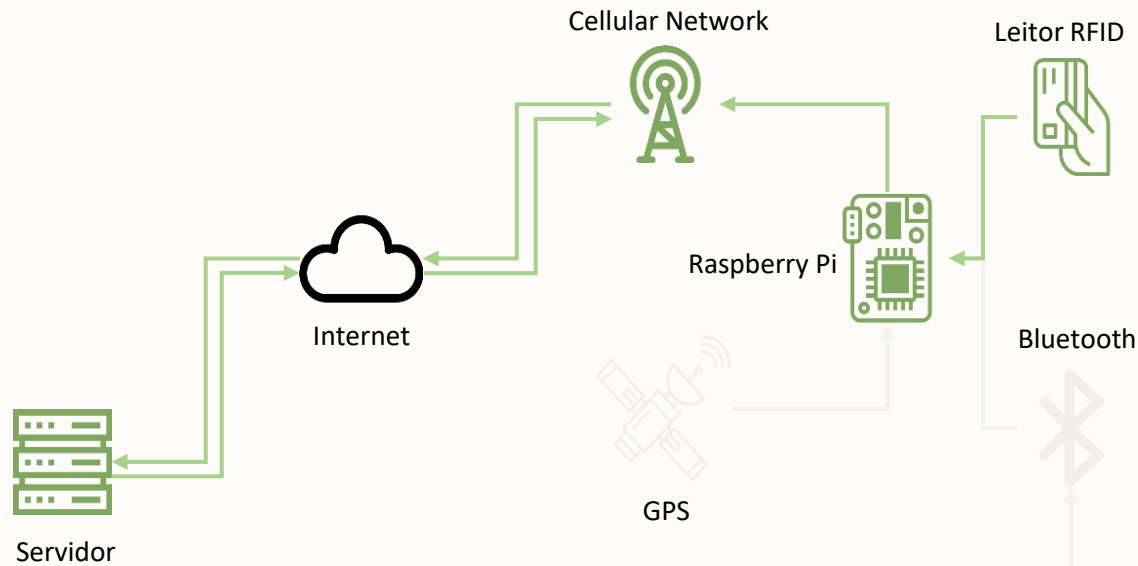


6

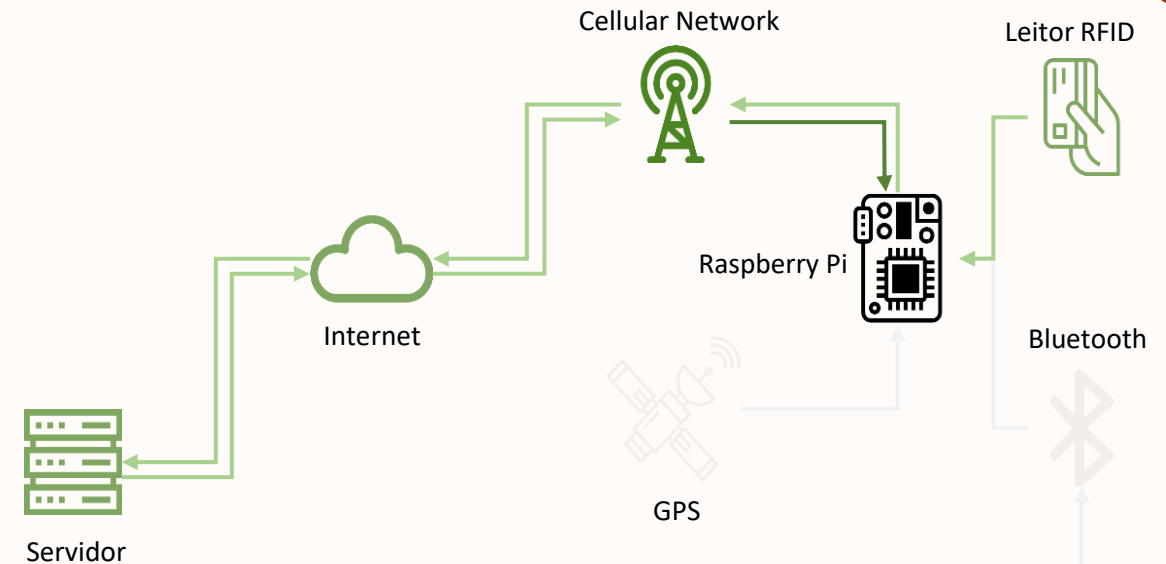


Exemplo de troca de mensagens

5

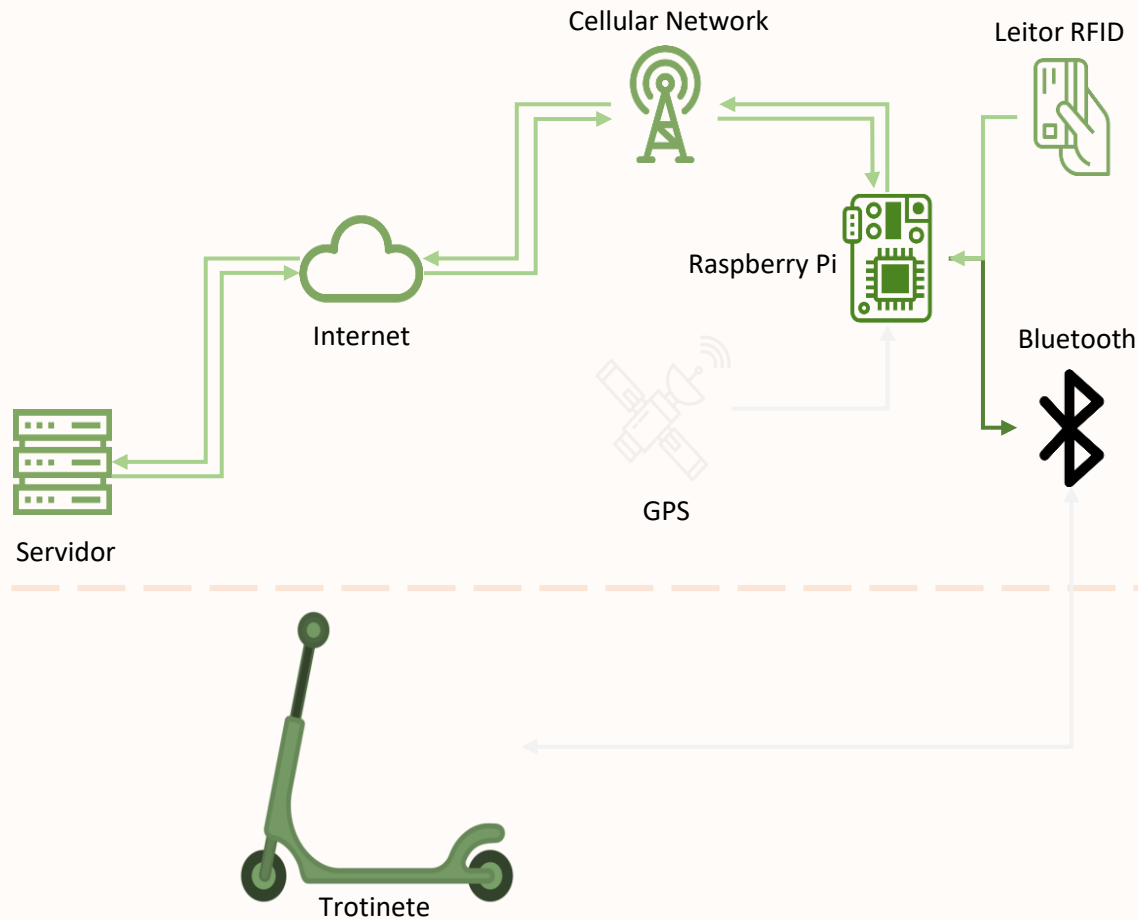


6

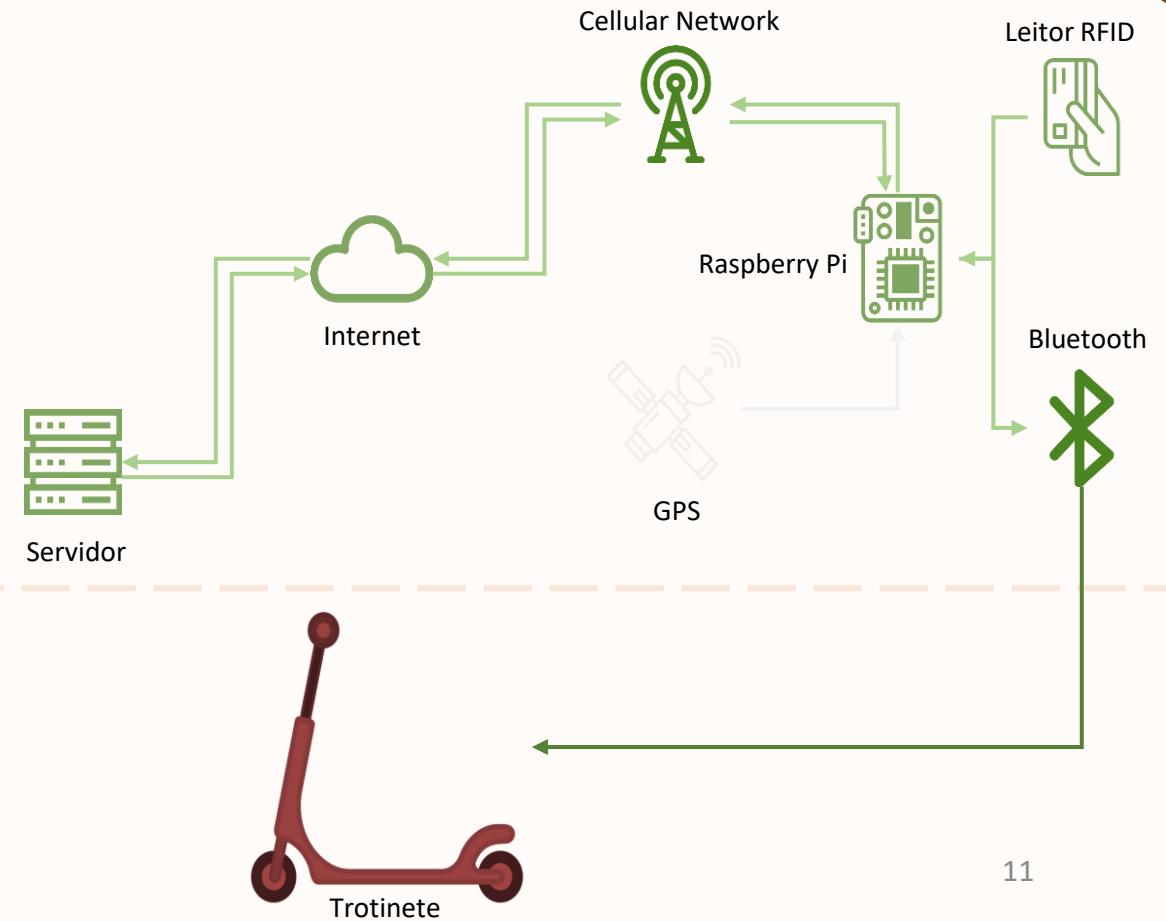


Exemplo de troca de mensagens

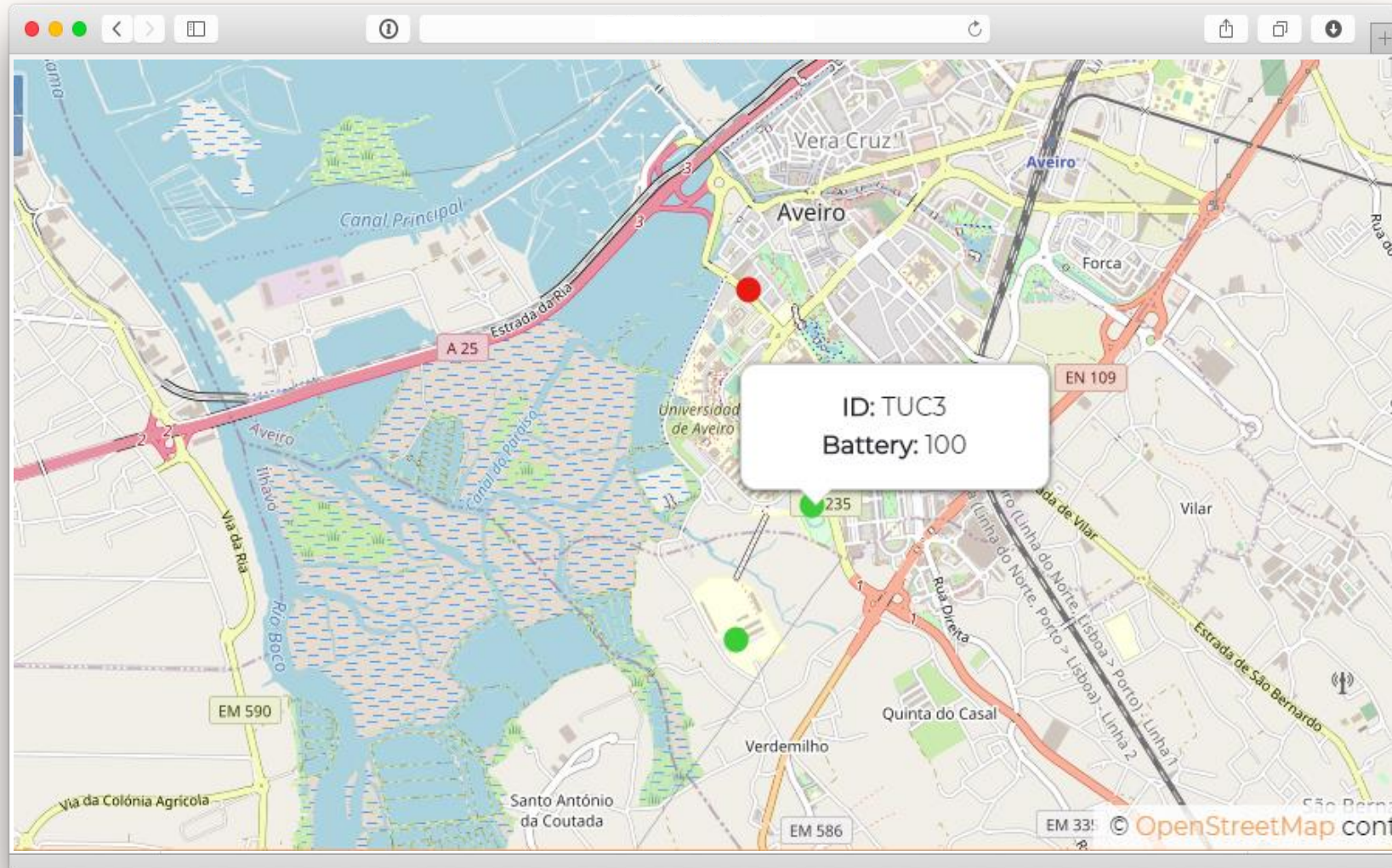
7



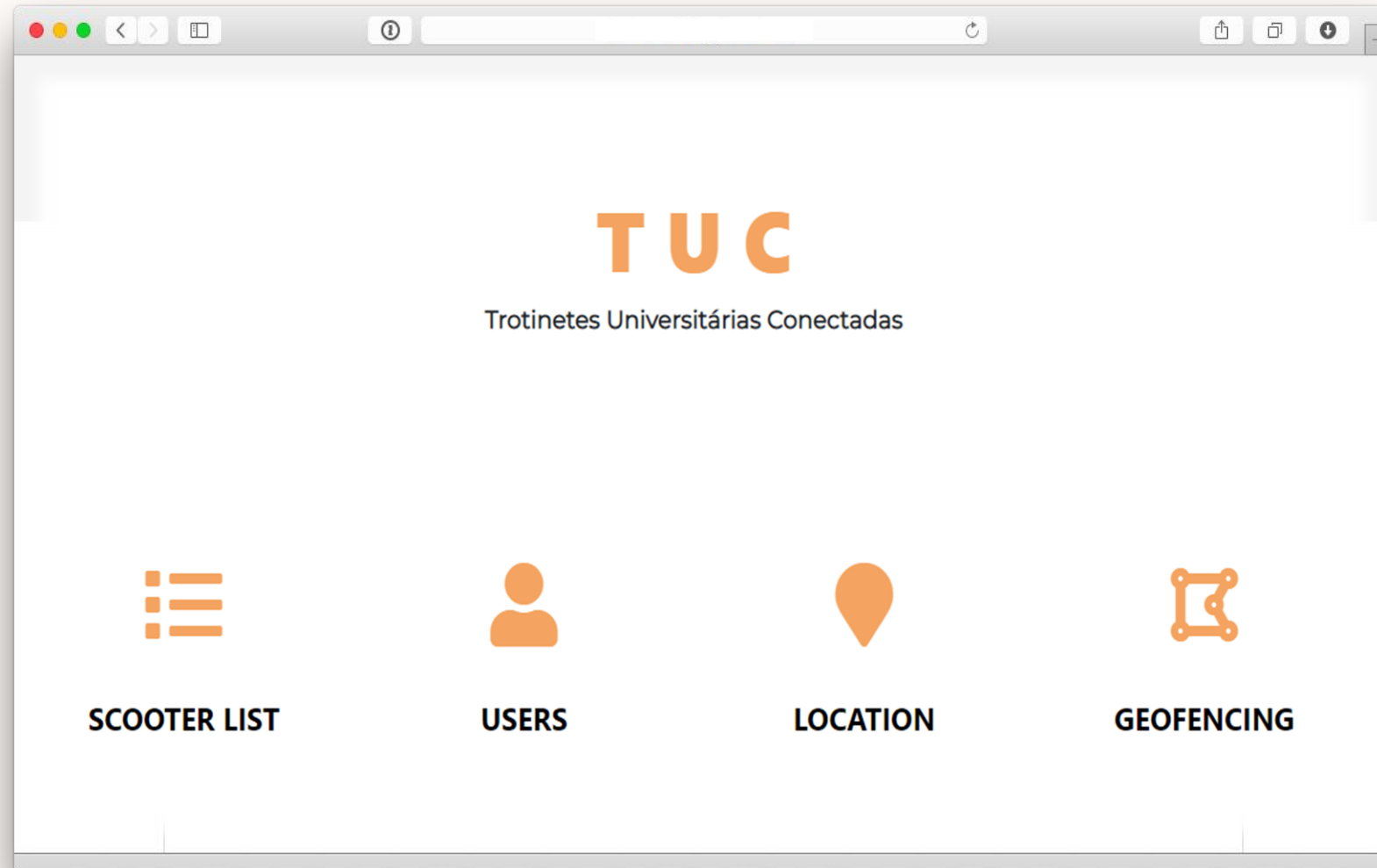
8



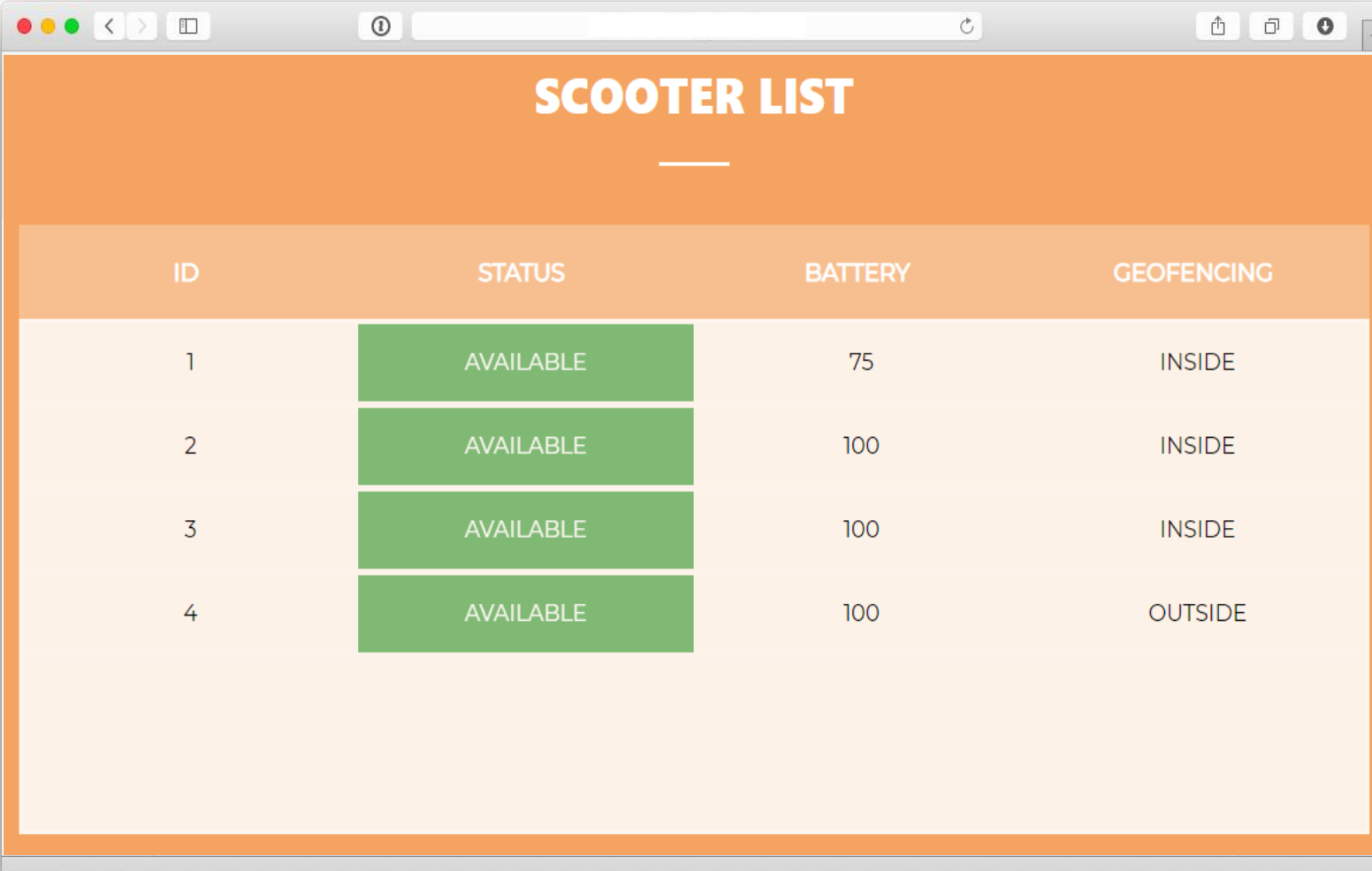
Portal do Utilizador



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The image shows a web browser window displaying a 'SCOOTER LIST' table. The browser's address bar is empty, and the page title is 'SCOOTER LIST'. The table has four columns: ID, STATUS, BATTERY, and GEOFENCING. It contains four rows of data, all with a status of 'AVAILABLE'.

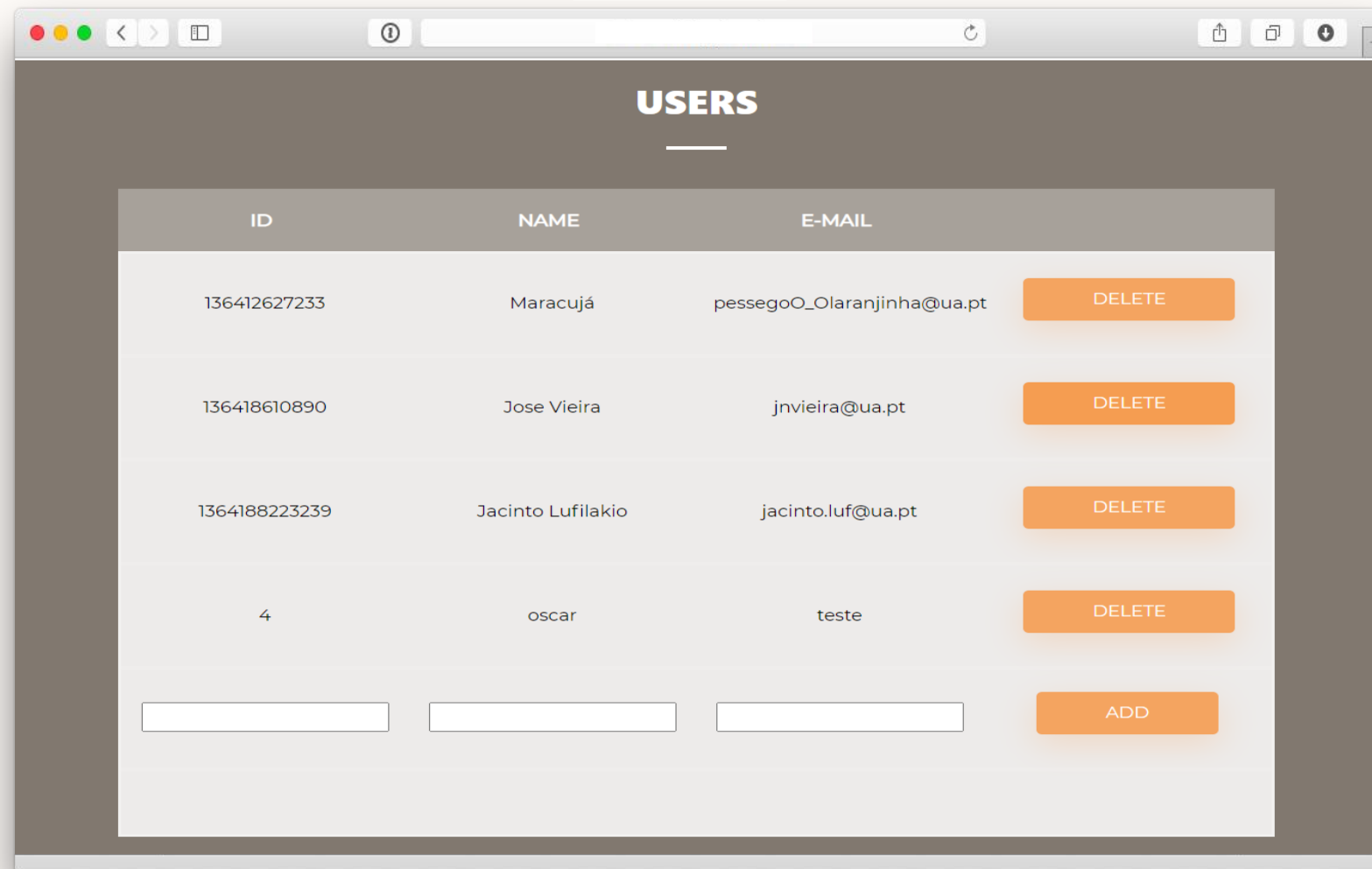
ID	STATUS	BATTERY	GEOFENCING
1	AVAILABLE	75	INSIDE
2	AVAILABLE	100	INSIDE
3	AVAILABLE	100	INSIDE
4	AVAILABLE	100	OUTSIDE

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ID	STATUS	BATTERY	GEOFENCING
1	IN USE	75	
2	AVAILABLE	100	
3	AVAILABLE	100	
4	AVAILABLE	100	

CARD ID	NAME	UNLOCK TIME	LOCK TIME
136412627233	Maracujá	01/06/2020 15:37	01/06/2020 15:38
136412627233	Maracujá	01/06/2020 18:44	01/06/2020 18:45
136412627233	Maracujá	01/06/2020 20:24	01/06/2020 20:37
136412627233	Maracujá	01/06/2020 20:30	01/06/2020 20:37
136412627233	Maracujá	02/06/2020 21:39	02/06/2020 21:39

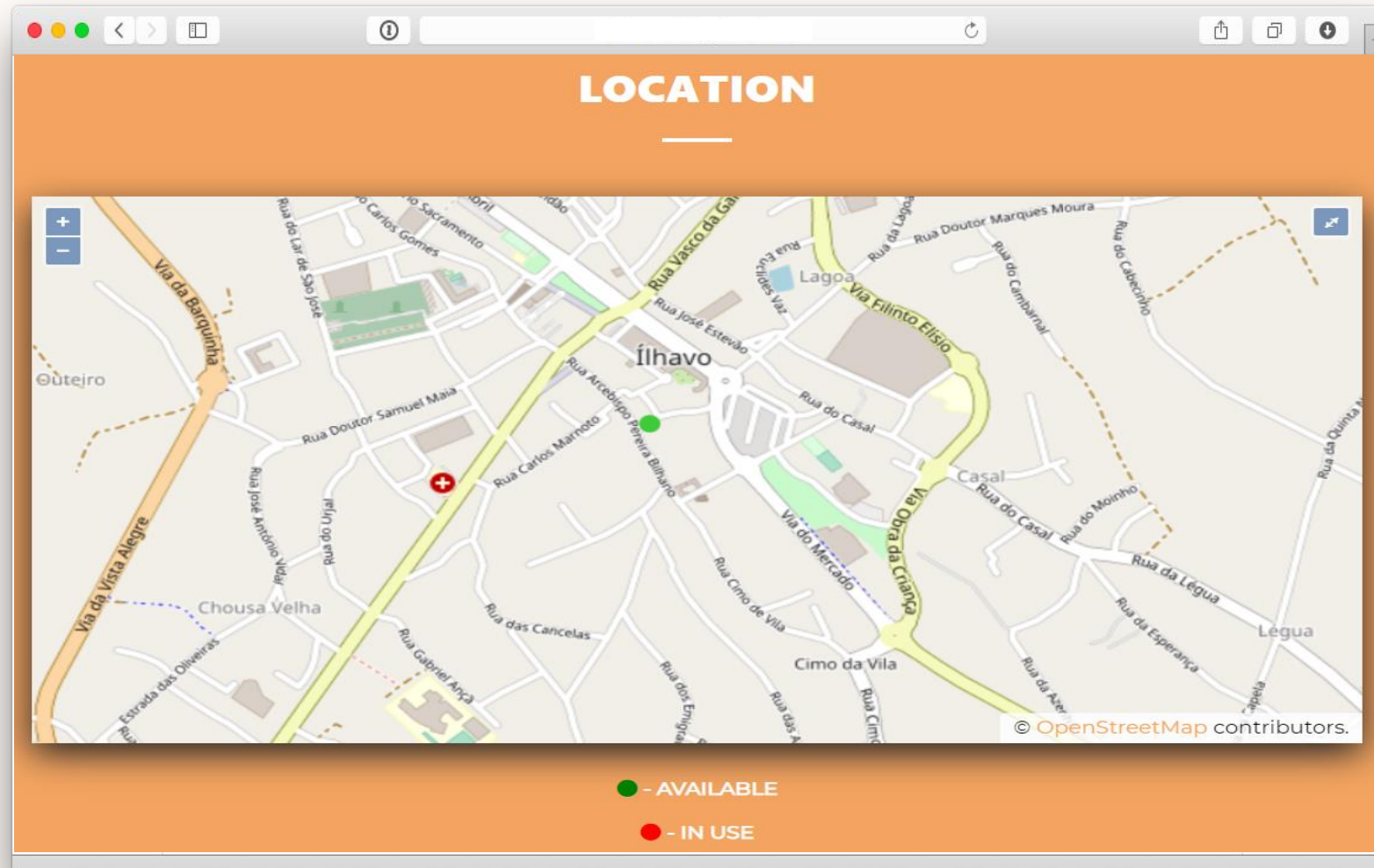
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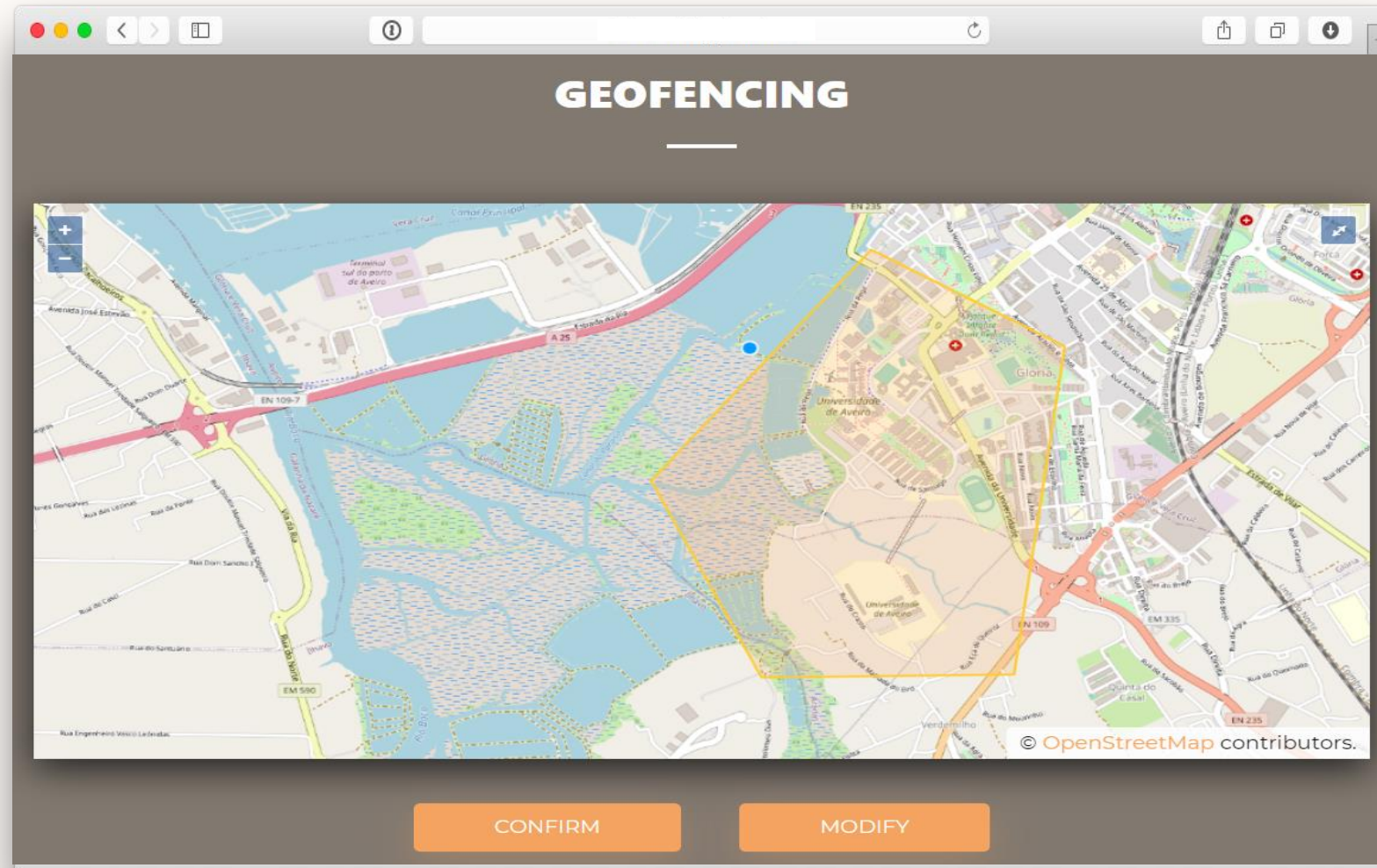
The screenshot displays a web browser window with a title bar and standard navigation icons. The main content area is titled "USERS" in a bold, sans-serif font. Below the title is a table with three columns: "ID", "NAME", and "E-MAIL". The table contains four rows of user data. Each row has an orange "DELETE" button to its right. At the bottom of the table, there are three input fields for adding a new user, followed by an orange "ADD" button.

ID	NAME	E-MAIL	
136412627233	Maracujá	pessegoO_Olaranjinha@ua.pt	DELETE
136418610890	Jose Vieira	jnvieira@ua.pt	DELETE
1364188223239	Jacinto Lufilakio	jacinto.luf@ua.pt	DELETE
4	oscar	teste	DELETE
<input type="text"/>	<input type="text"/>	<input type="text"/>	ADD

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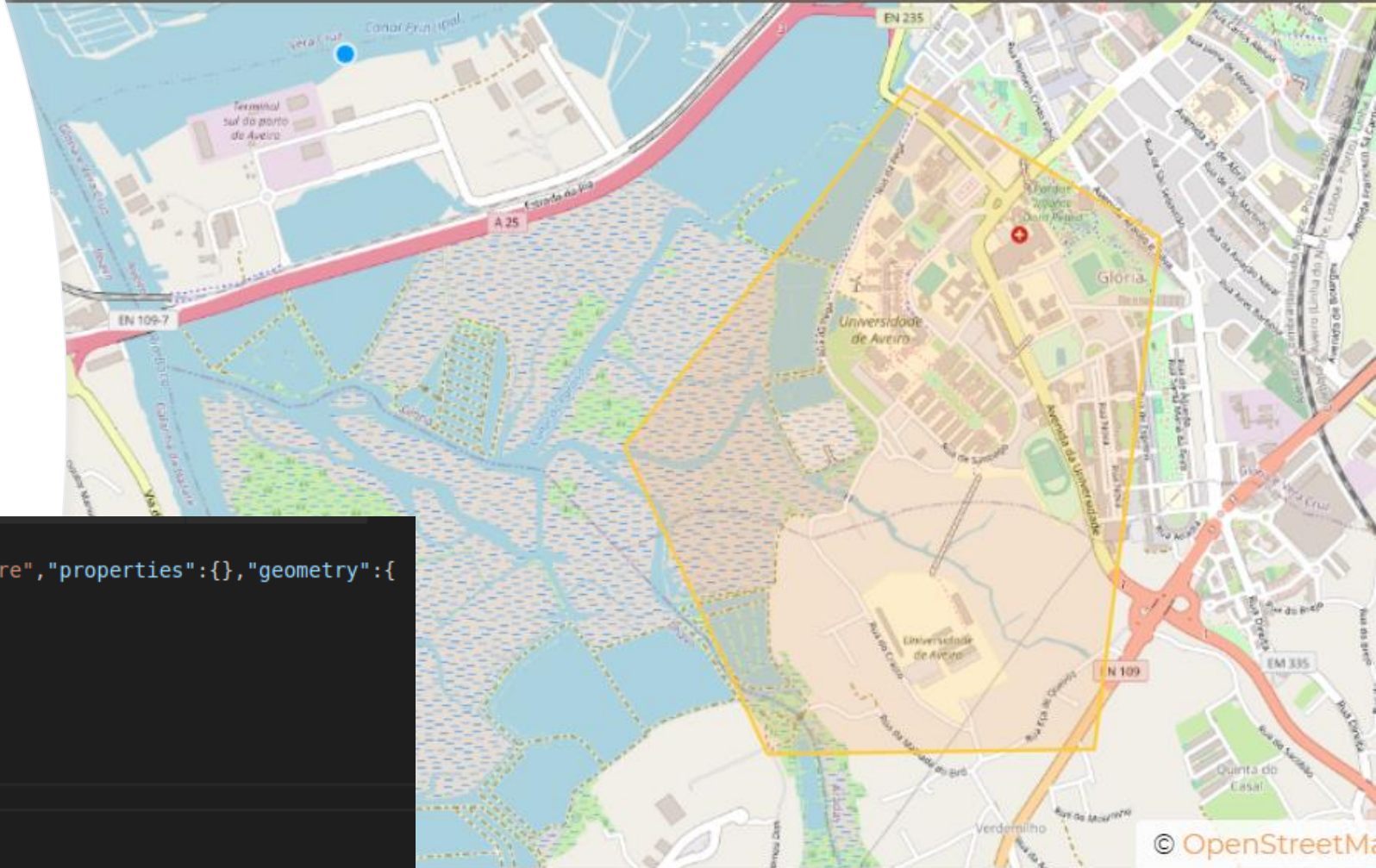


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Geofencing

```
static > {} geomapping.geojson > ...  
1 [{"type": "FeatureCollection", "features": [{"type": "Feature", "properties": {}, "geometry": {  
2   "type": "Polygon", "coordinates": [[  
3     [-8.6688487756867, 40.599529265050506],  
4     [-8.668200678931303, 40.59655846589712],  
5     [-8.666388409069771, 40.59635797805572],  
6     [-8.663399963581199, 40.59623039425486],  
7     [-8.660963600174755, 40.59780694698367],  
8     [-8.664060061941838, 40.60002134797526],  
9     [-8.6688487756867, 40.599529265050506]]]}]}]
```



CONFIRM

MODIFY

Demonstração

- Como bloquear a trotinete
- Como desbloquear a trotinete
- Componentes da dashboard