



CISMOB
Interreg Europe



CISMOB

Cooperative information platform for low carbon
and sustainable mobility – Pilot action on Real
time Information for public Transport

WHAT HAS BEEN DONE SO FAR?



Main vision

To increase the sustainability by improving the efficiency in the use of urban transport infrastructure through ICT.



Learning with good practices

Open data
Platforms:
Trafiklab
Stockholm
Open data
Caceres

Public
transport
management
Timisoara



Designing a pilot action

Objective: Improve the implementation of inspiring GPs, considering the demographic and socioeconomic contexts of the Centro Region

Expected impacts:

- Better governance → new evaluation criteria (PI 4e OP CENTRO 2020),
- Societal impacts → new ICT solutions positively evaluated by citizens,
- Higher visibility of the project,
- Higher interest of regional players in replicating related GPs → + projects.



Case studies

- Inter-municipal Community of Coimbra
- Regional and urban buses line (Cantanhede)



Pilot case studies

**CANTANHEDE
OPERATOR URBIN**

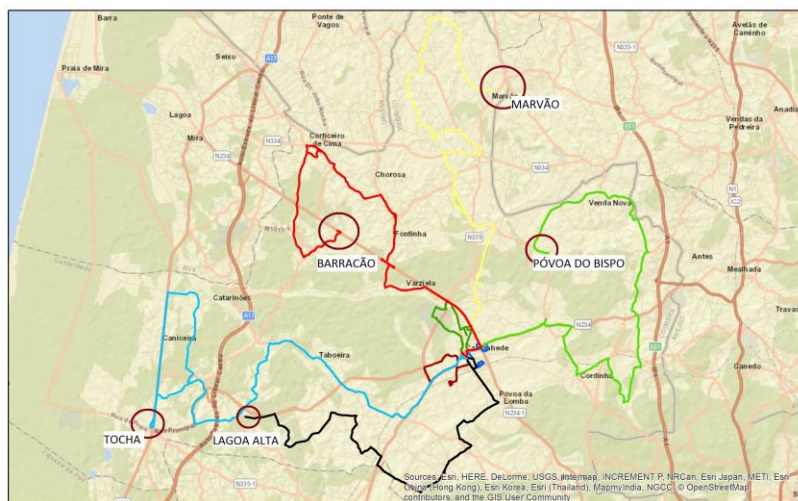
1 BUS

8 LINES

10 000 passengers per year



Linhas de Cantanhede (urbIn)

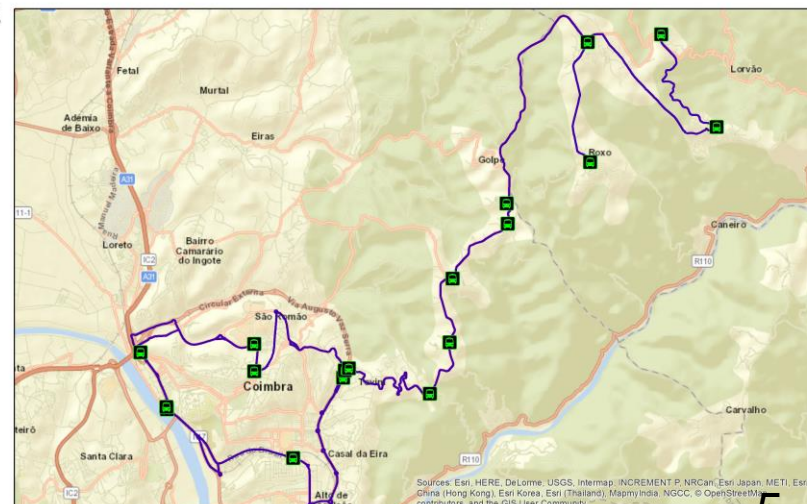


COIMBRA PARADELA PENACOVA

5 BUSES

1 LINE

100 000 passengers per year



STATED PREFERENDE SURVEY

TARGET

Citizens from Stockholm and
Centro Region (Aveiro, Cantahede,
Penacova and Coimbra)



OBJECTIVE

to evaluate which information platforms and
types of information on public transport are preferable
among different segments of the population

UNIVERSE

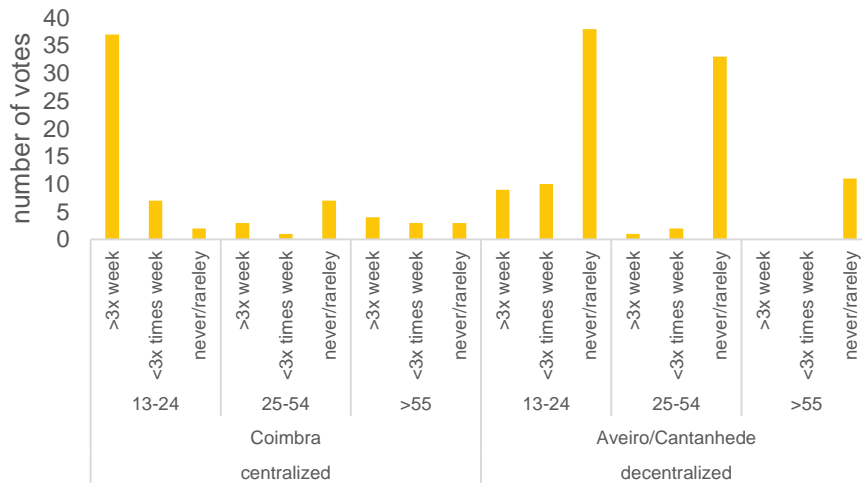
600 respondents both online and in person

STRUCTURE

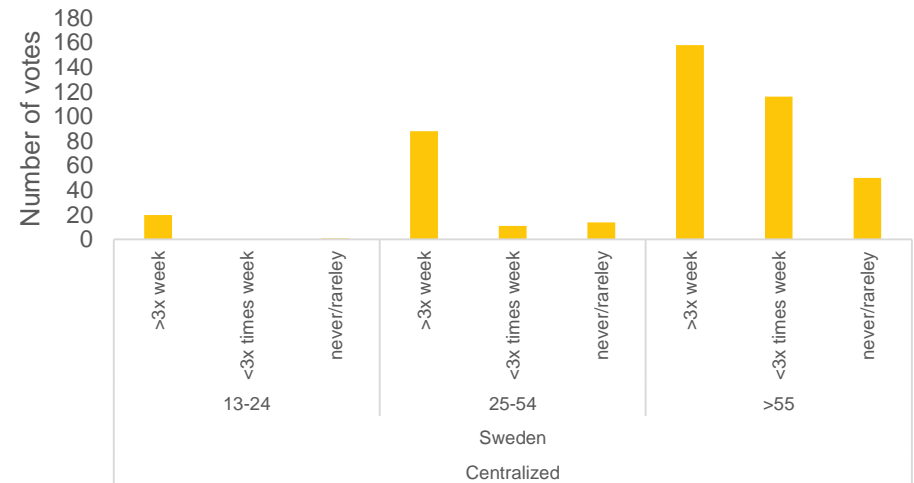
- socio-economic information (individual characteristics, income level, mobile device characteristics),
- current travel behavior (location of daily trips, transport mode)
- diagnostic information (types of and platforms with real-time information for public transport).

Some Results

Usage of public transport - Portugal



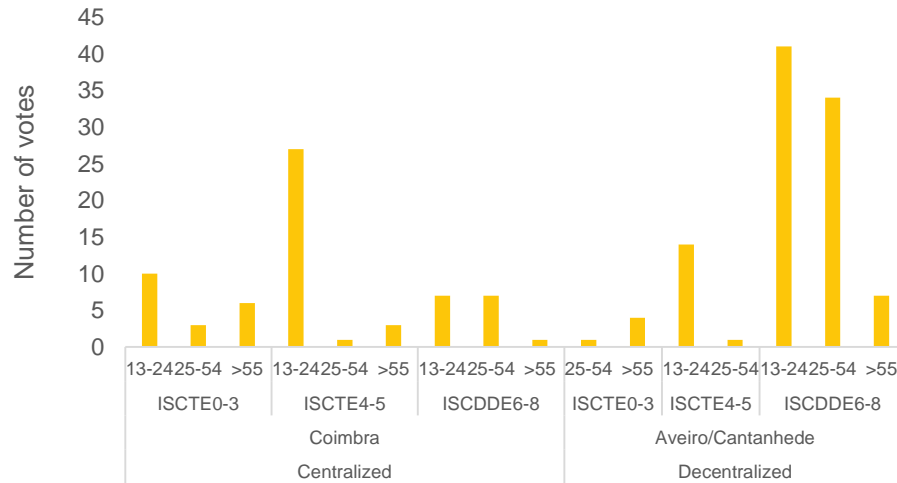
Usage of public transport - Sweden



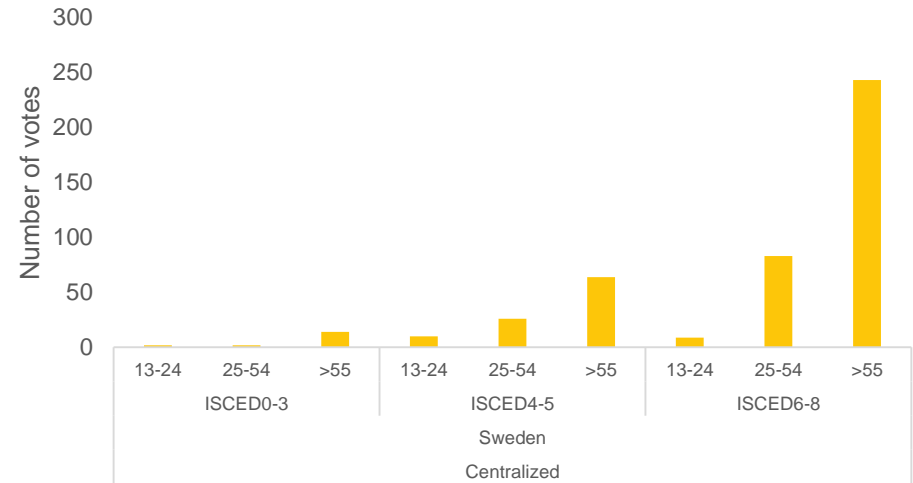
Understanding the respondents : Comparison of usage of public transport in each country

Some Results

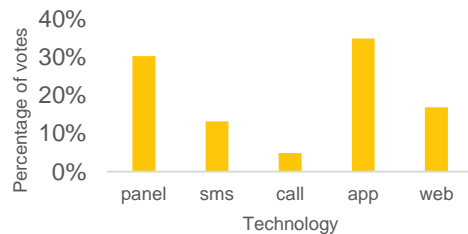
Qualifications per age - Portugal



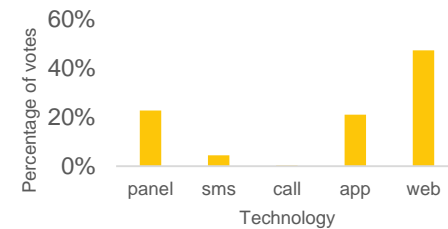
Qualifications per age - Sweden



percentage preferences - Portugal



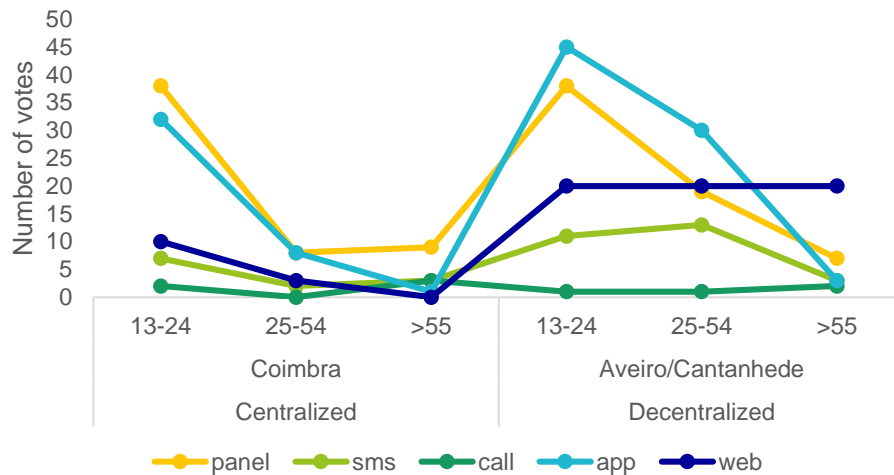
Percentage preferences - Sweden



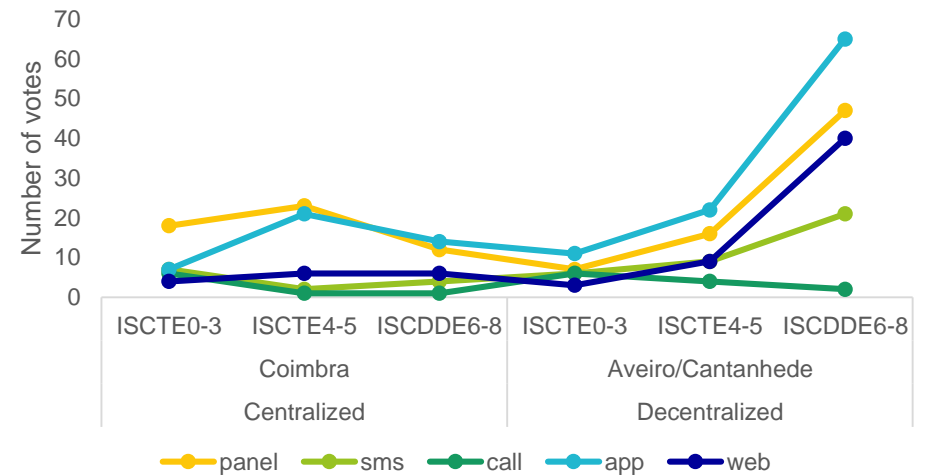
Understanding the respondents : Comparison of Qualifications per country in each age gap and technology preferences

Some Results

Number of votes per age



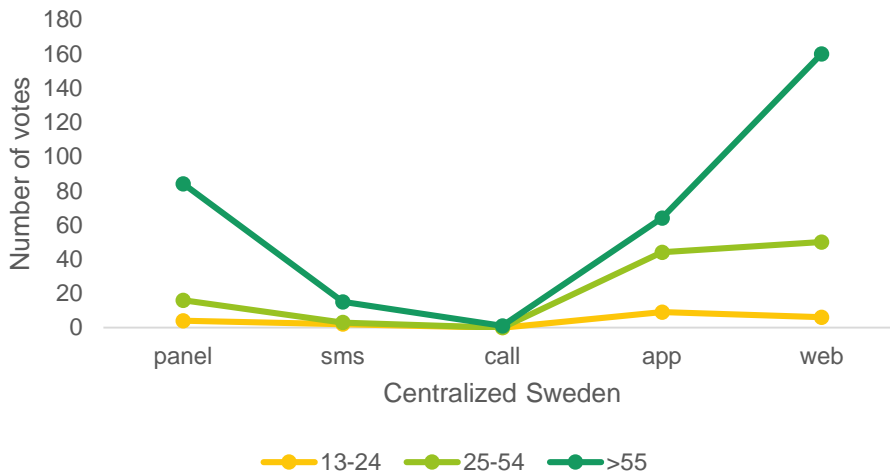
Number of votes per qualification



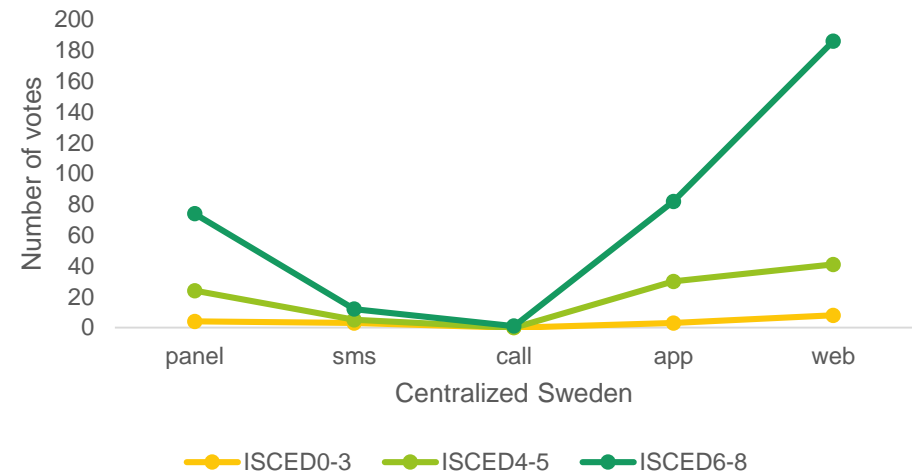
Understanding the respondents : importance of age of the respondents vs qualifications - Portugal

Some Results

Number of votes per age



Number of votes per qualification



Understanding the respondents : importance of age of the respondents vs qualifications – Sweden

Preliminary conclusions

- **Smartphone dissemination is the most voted solution by people from 17 to 55 in Portugal and high qualification levels**
- **Panels in bus stops are the second most appreciated solution by people until 55 and the most appreciated by people over 55**
- **Web-desktop solutions are well appreciated in locations where this kind of information is available (Stockholm) 35 -55**
- **SMS and call services were not valued by population (thus not considered in the pilot)**
- **More complex statistical analysis is ongoing**



CISMOB
Interreg Europe



European Union
European Regional
Development Fund

GNSS BUS tracker



CISMOB

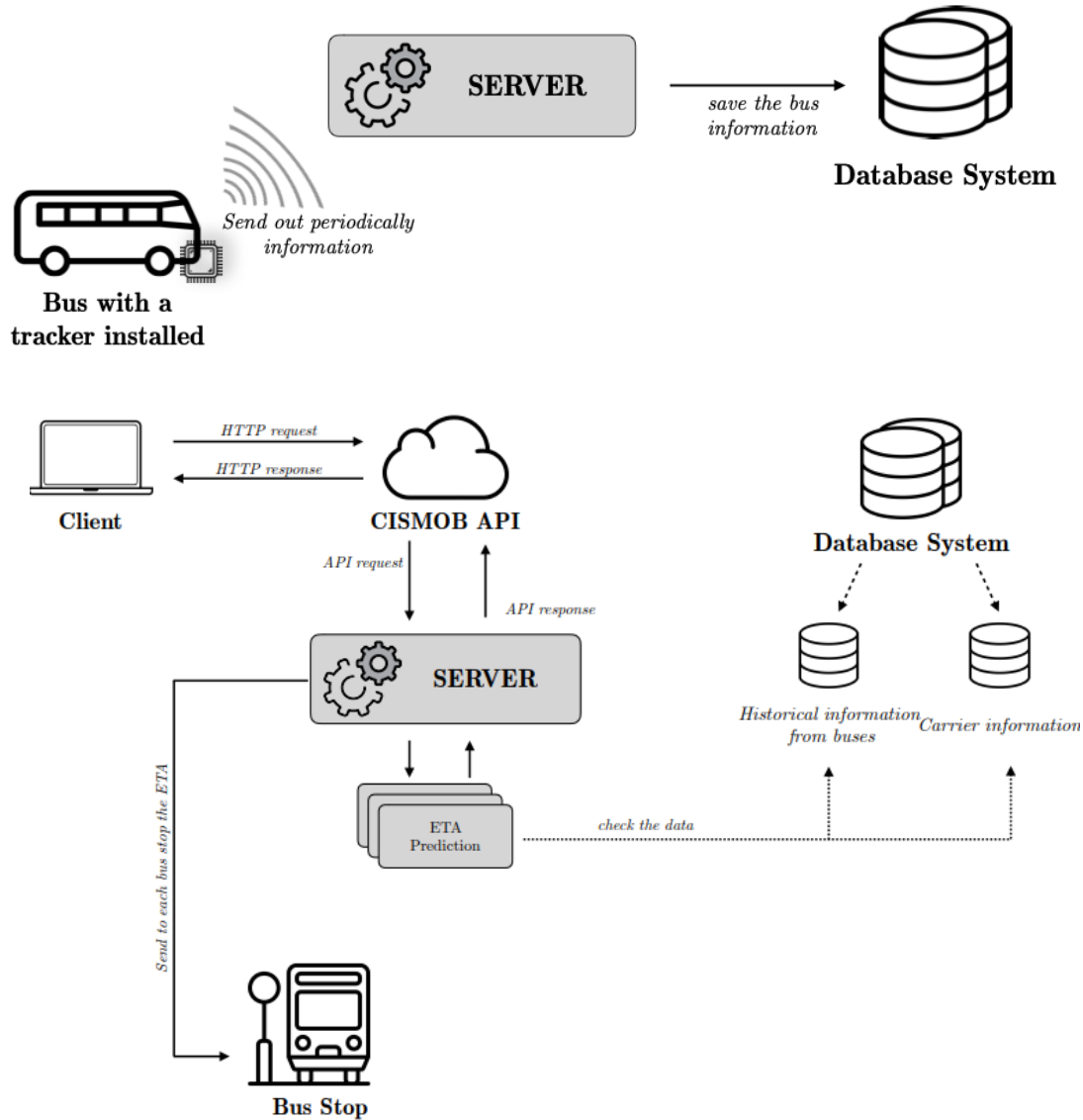
Interreg Europe



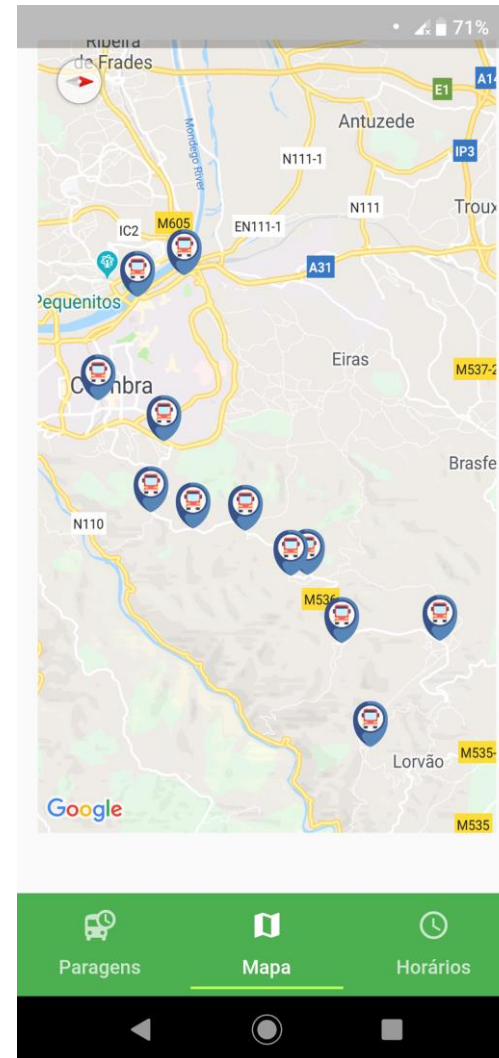
European Union
European Regional
Development Fund

Decentralized dissemination
platforms to be tested

Data management



Smartphone application



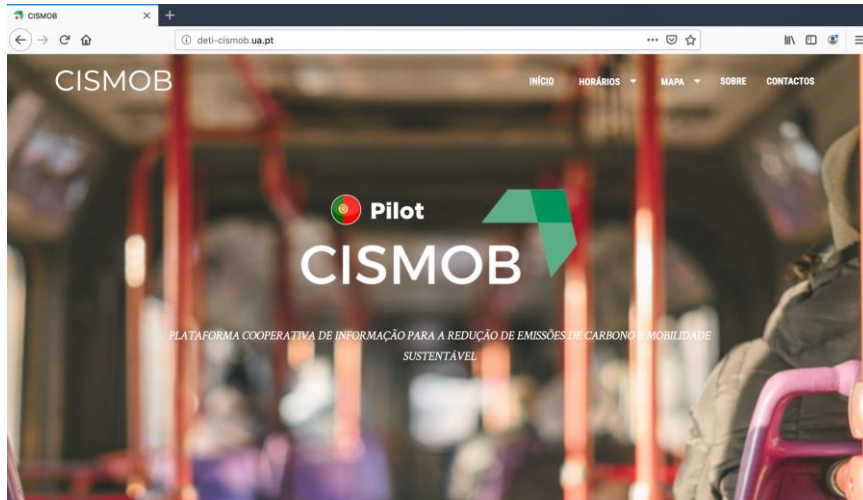
To be available in
Google play store

QR code to
download
application

Provide real time
information on
delays in available
and static
information if not
available



Website – desktop info



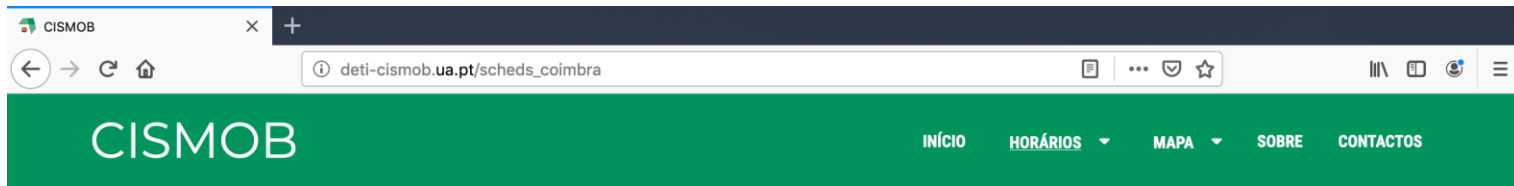
<http://deti-cismob.ua.pt>

Website with information about the project, also includes:

- QR code to download application
- Provide real time information on delays in available and static information if not available

Website – desktop info

Schedules information according to the day of the week (real time information on delays in available and static information if not available). Displays next two buses if possible.



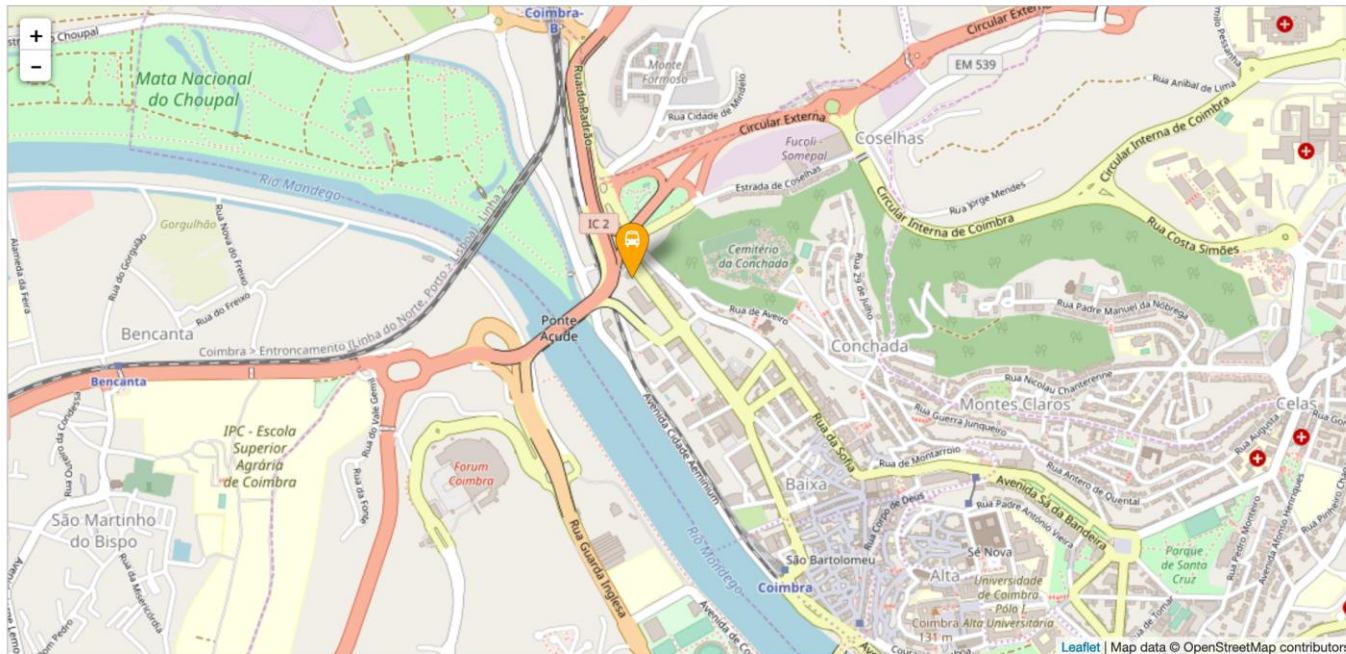
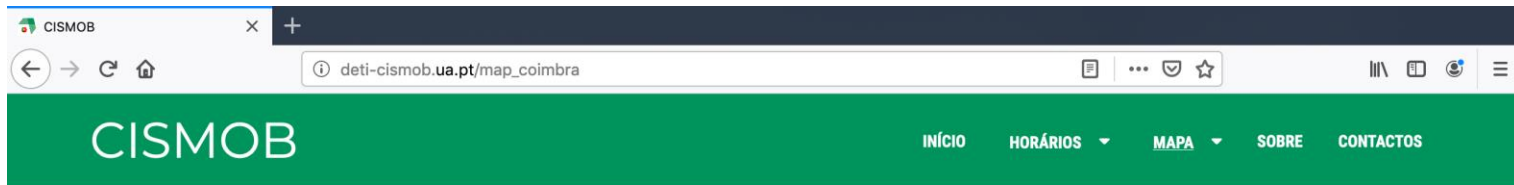
Dias úteis

| | | | |
|-----------------------|-------|-------|-------|
| Coimbra | 13:30 | 17:15 | 19:05 |
| Coimbra - Portagem | 13:32 | 17:17 | 19:07 |
| Calhabé | 13:35 | 17:20 | 19:10 |
| Tovim | 13:41 | 17:26 | 19:16 |
| Vale de Canas | 13:46 | 17:31 | 19:21 |
| Casal do Lobo | 13:49 | 17:34 | 19:24 |
| Cova do Ouro | 13:52 | 17:37 | 19:27 |
| Dianteiro | 13:54 | 17:39 | 19:29 |
| Carapinheira | 13:56 | 17:41 | 19:31 |
| Roxo | 14:01 | 17:46 | 19:36 |
| Aveleira (X) | 14:04 | 17:49 | 19:39 |
| São Mamede - Penacova | 14:10 | 17:55 | 19:45 |
| Paradela - Penacova | 14:15 | 18:00 | 19:50 |

| | | | | | | |
|-----------------------|-------|-------|-------|-------|-------|-------|
| Paradela - Penacova | 06:20 | 07:35 | 07:45 | 09:20 | 14:25 | 18:15 |
| São Mamede - Penacova | 06:25 | 07:40 | 07:50 | 09:25 | 14:30 | 18:20 |
| Aveleira (X) | 06:31 | 07:46 | 07:56 | 09:31 | 14:36 | 18:26 |
| Roxo | 06:34 | 07:49 | 07:59 | 09:34 | 14:39 | 18:29 |
| Carapinheira | 06:39 | 07:54 | 08:04 | 09:39 | 14:44 | 18:34 |
| Dianteiro | 06:41 | 07:56 | 08:06 | 09:41 | 14:46 | 18:36 |
| Cova do Ouro | 06:43 | 07:58 | 08:08 | 09:43 | 14:48 | 18:38 |
| Casal do Lobo | 06:46 | 08:01 | 08:11 | 09:46 | 14:51 | 18:41 |
| Vale de Canas | 06:49 | 08:04 | 08:14 | 09:49 | 14:54 | 18:44 |
| Tovim | 06:54 | 08:09 | 08:19 | 09:54 | 14:59 | 18:49 |
| Calhabé | 06:59 | 08:14 | 08:24 | 09:59 | 15:04 | 18:54 |
| Coimbra - Portagem | 07:02 | 08:17 | 08:27 | 10:02 | 15:07 | 18:57 |
| Coimbra | 07:05 | 08:20 | 08:30 | 10:05 | 15:10 | 19:00 |

Website – desktop info

Real time position of the buses with the trackers installed, displaying on map





CISMOB
Interreg Europe



European Union
European Regional
Development Fund

Centralized dissemination
platforms to be tested

Solar E-paper

Installation July 2019

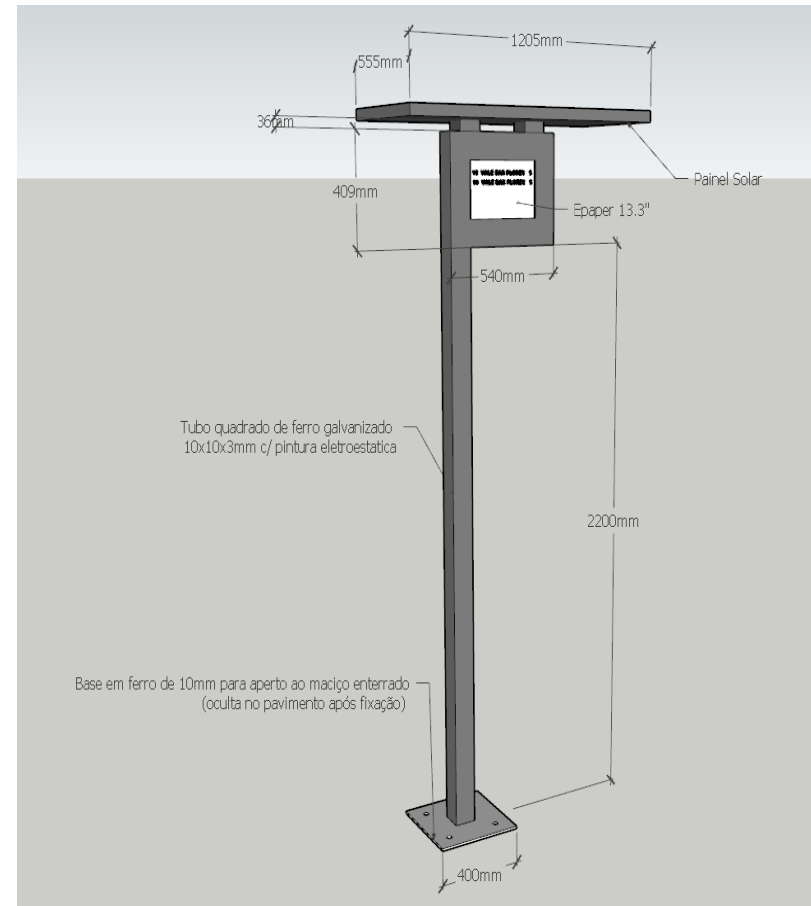
Energy efficient

E-paper technology

Installed in bus stops with higher demand in rural area “Roxo” town Bus stop and Centro (Cantanhede)



Equipment to be installed



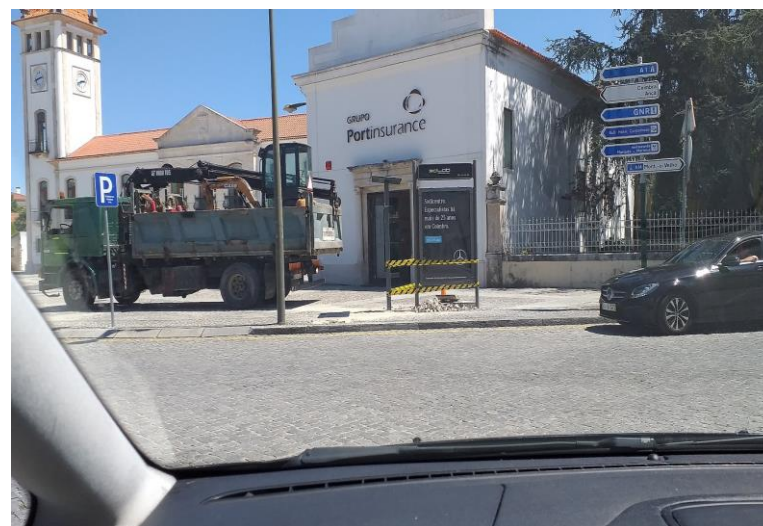
Cantanhede Centro, BUS STOP

CANTANHEDE

BUS STOP "CENTRO"



Cantanhede Centro BUS STOP



Roxo, Lorvão Municipality of Penacova



Coimbra – Roxo - Paradela

Coimbra 105 842 (2011), altitude 29 m

Roxo, Lorvão 3898 (2011) altitude 532 m



Roxo Bus stop



Next steps

- **Tuning the prediction of real time delay**
- **Dissemination of prototype**
- **Stated preference surveys**
- **Final report – policy recommendations**



CISMOB
Interreg Europe



European Union
European Regional
Development Fund

Thank you

jorgebandeira@ua.pt



Project smedia