ERIT Urban Mobility matchmaking
Mobility & energy call for 2022

Print screens by Petri Allekotte 29.3.21

We are pleased to announce the list of speakers that will pitch and host the "Meet the Speaker" sessions for Mobility & Energy next Monday, March 29.

MORNING PITCHES:

ORGANISATION	TITLE	SPEAKER	POSITION
Tractebel	Parking Energy Hub	Sven Vlassenroot	Project Manager smart mobility
SKODA AUTO	Interesting thematic areas in BP2022 for SA, presentation of the Corporate carsharing project	Pavel Nedoma	Manager of EIT UM project in SKODA AUTO
Universitat Politècnica de Catalunya	Battery state of health and remaining useful life prediction	Jordi Riba Ruiz	Full Professor
Nimble energy	NIMBEE - Fast Mobile Renewable On-demand Electric Vehicle Charging	Jan Šamal	CEO / Owner
MOJO GREEN	Mobile battery integrated electric vehicle fast charging	Dhilly Babu	CEO
Wenar sp. z o.o.	Lampabox	Roberto Ventura	CEO
Malta College of Arts, Science and Technology	Mobility research areas and potential pilot site at MCAST - Malta	Suzanne Maas	Researcher
PowerHub	Charging Infrastructure	Lucie Bila	Project manager

AFTERNOON PITCHES:

ORGANISATION	TITLE	SPEAKER	POSITION
UPC	Development of Supervisory Controllers for hydrogen systems	Maria Serra	Doctor
Tresoil Biofuels SRL	Waste to Energy	Roger Preston	CEO
Technical University of Madrid	Next generation of clean technologies for future mobility	Jose Maria Lopez	Director of INSIA-UPM
Institut VEDECOM - Electrification projects	Green and intelligent mobility in urban areas	Lynda Halit	Director of the interdisciplinary research department
EVIO - Electrical Mobility	Electric vehicle charging in the palm of your hand	Carlos Almeida	CEO
DUCKT	Micromobility Infrastructure - Dock, Lock and Charge.	Cargi Selcuklu	CEO
Solum	Solar charging stations for micro-mobility	Luis Munoz	Head of Product & Innovation
KNOT	Docking mathematics: how investing in charging infrastructure can bring micro-mobility charing to the profitability	Polina Mikhaylova	Co-founder and COO

Challenge Portfolio: Mobility and Energy

- The transport sector in Europe is over 90 % fossil fuel dependent. It is crucial that we change this in order to decarbonise our transport systems and increase energy independence.
- Replacing ICEs with cleaner fuel-propulsion solutions requires new vehicle technologies, charging/refueling supply as well as demand for the fuels. To enable this requires new partnerships, business models and new infrastructure.
- Poses challenges relating to appropriate charging infrastructure covering a wide variety of transport patterns and needs, and impacts the electricity grid.
- Load-balancing solutions are needed to ensure that demand matches supply.
- Refueling stations need to be in place for other cleaner fuels.
- Uptake of cleaner fuels has been slow in most European cities.

Examples

- Innovative measures to increase the demand for zero-emission vehicles, showing a clear take-up of vehicles in fleets.
- Demonstration of innovative charging solutions to test new load balancing techniques, fast and slow charging solutions, and behavioural incentives.
- Implement and test universal charging of universal cableless solutions for all mobility vehicles.
- Demonstration of solutions where different energy players and stakeholders align on single-use urban access with user-friendly design.
- Demonstration of smart grid/micro grid energy infrastructure with green energy production for all types of Vehicles of the Future.
- Installation of easily relocatable mid-size high-capacity energy storage solutions to upgrade existing or planned charging infrastructure movable.
- Innovative cooperation models and business model development to create refueling stations for cleaner vehicles.

Parking Energy Hub

- Decarbonization is one of the main goals in city perspective worldwide
- The roll-out of charging infrastructure will have his impact on the urban and public environment, the use of the grid, etc.
- City policies **encourage the need for parking space outside city area** and that these parking's are foreseen with good alternative transport modes

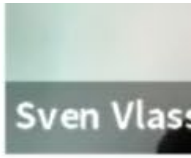
Parking Energy Hub

- **Objective**

- change the way charging points have been deployed by creating an eco-system of mobility hub and EV-charging rather than the standalone charging posts implemented historically.

- We strongly believe that this combined parking infrastructure offering can make a real difference for the emerging EV revolution.

Parking Energy Hub



- **Challenges**
  - How to provide enough energy at a single location for a high demand?
  - Charging infra for a mix of vehicles: cars, vans, trucks, buses
  - Design and organization of the parking spaces (energy hub combined with other transport)
  - Future proof readiness (V2X)
  - Business potential on short and longer term

Contact: Sven.vlassenroot@tractebel.engie.com or +32478383271

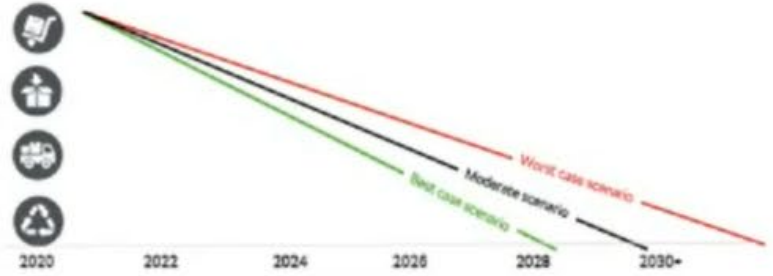

ŠKODA ENERGY STORAGE
EIT URBAN MOBILITY MOBILITY AND ENERGY
Jan *elezný (*...
ŠKODA
SIMPLY CLEVER
Pavel Nedoma
Jan Železný
EB
VDA
VISION iV

Why Secondary utilization of automotive batteries?

2nd life offers multiple Economical & Environmental benefits

Only ŠKODA is up to produce **1,6 mio** EV's in next years

- Battery at the end of vehicle's life is projected to have >70% capacity



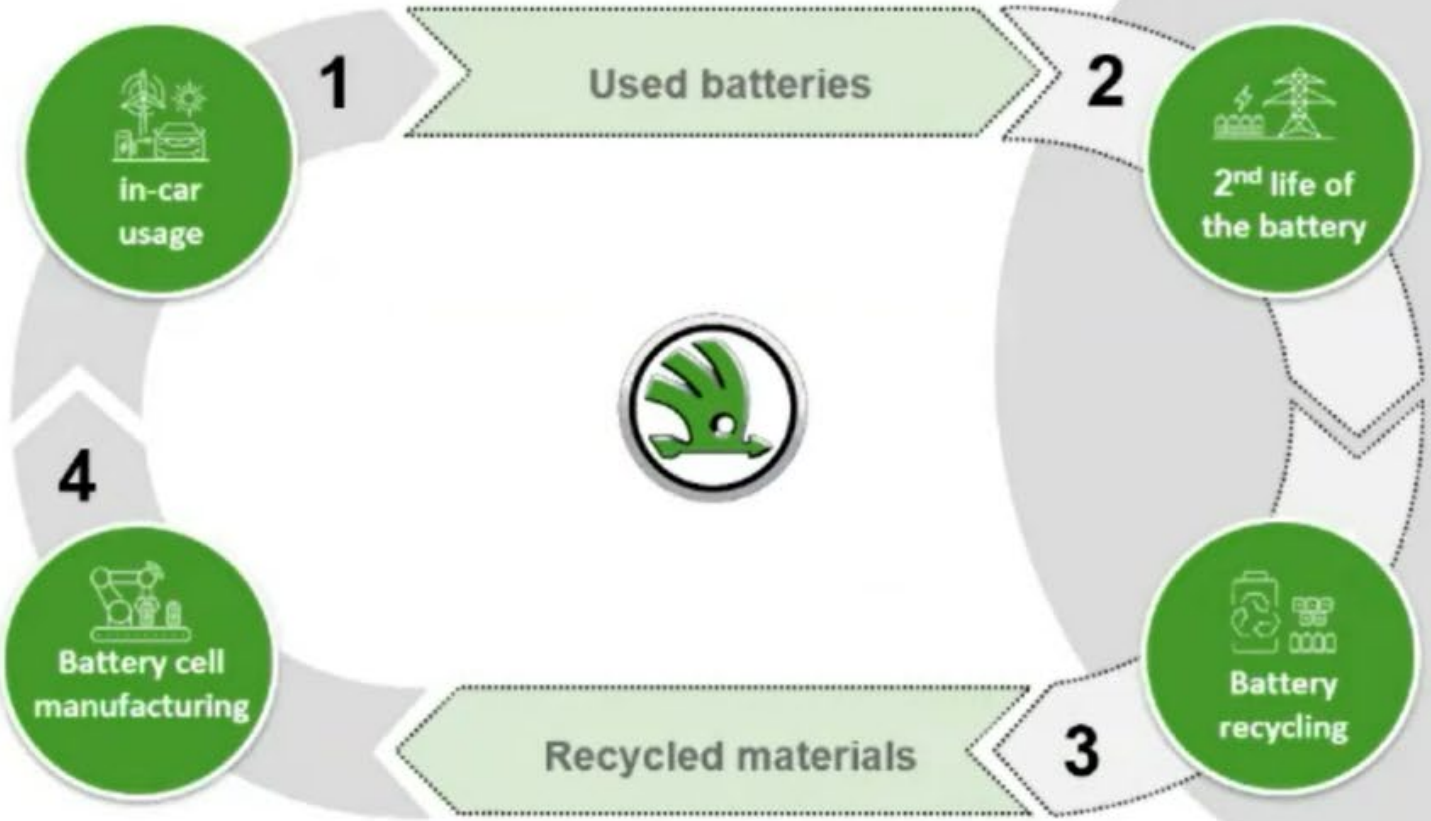
Key to sustainable battery production is **recycling**

- Today: **not effective**
- Future: >90% of the battery cell can be recycled (incl. Lithium, Nickel…)

Stationary 2nd life Energy Storage:

1) Prolongs battery lifespan by 10 – 15 years
2) Reduces CO_2 footprint
3) Offers significantly lower price (ROI ca. 4 yrs.)
4) Allows customer to:
   a) Optimize own energy consumption
   b) Save green energy
   c) Build high power EV charging hubs
   d) Be independent on the scale of Grid connection…

2nd life of HV battery within the circular economy setup



- Scalable capacity up to 550 kWh power up to 300 kW
- White-label design
- After the 2nd lifecycle battery will be recycled more effeciently, with positive business case and **reused for new battery cell production**

Energy Storage technical detail

PRODUCT DESCRIPTION

- Modular 2nd life energy storage
- Direct energy consumption optimization of charging infrastructure or whole building

KEY FEATURES

- **Active and passive fire protection measures for maximum safety**
- Galvanic insulation by integrated maintenance free power transformer
- Scalable capacity to up to 556 kWh
- Scalable power to up to 300 kW
- Possibility to use modules for maximum energy density or whole Battery systems
- **Easy maintenance and battery swap for service & upgrade**
- Active air cooling and thermal management
- Phase asymmetry to up to 100%
- Invertor efficiency over 96%

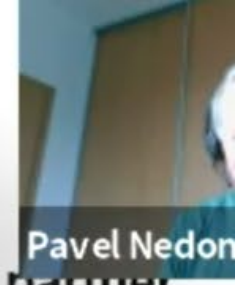
KEY FUNCTIONS

- Peakshaving (reserved power fee reduction)
- **Island operation & power backup**
- Compatible with building's energy management over MODBUS
- SMART solar power utilization
- **Energy business ready**
- **Remote control and diagnostics**

APPLICATION OVERVIEW

EIT Urban Mobility – Mobility and Energy

Secondary use of EV-batteries for Energy Storage



City + Urban green energy partner

Scalable capacity to up to 556 kWh

Scalable power to up to 300 kW

IP proposal

SEVES

STARTUP

Startup for the integration of energy storage into the city ecosystem

Financial Sustainability Model

EIT Urban Mobility – Mobility and Energy

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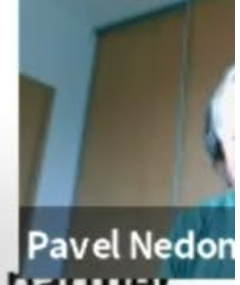

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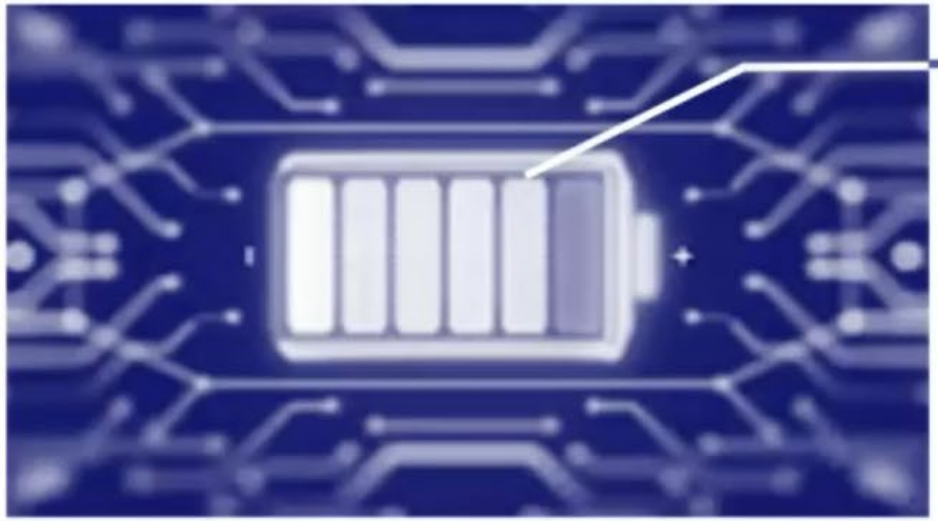
But, how?



Data acquisition

↓

Data processing

↓

Modelling + simulation

↓

State of Health

↓

Remaining Useful Life

←

CORRECTIVE ACTIONS

MCIA-AMBER proposal

- Measuring
- Modeling
- Deep Learning
- Machine Learning
- State of Health
- Remaining Useful Life Estimation

To join a consortium

- Recharging infrastructures
- Energy storage applications
- Second life batteries
- ...

Contact information
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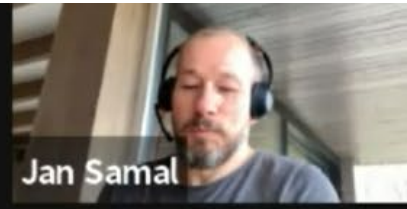
e-mail: jordi.riba-ruiz@upc.edu


Jan Samal
NIMBEE
Join the EV Charging Revolution

The Next Disruption



NIMBEE is Wolt for your Tesla

NIMBEE is a complex service for on-demand charging of electric vehicles (EV) based on innovative mobile charging units and an end-user application.

Comfort

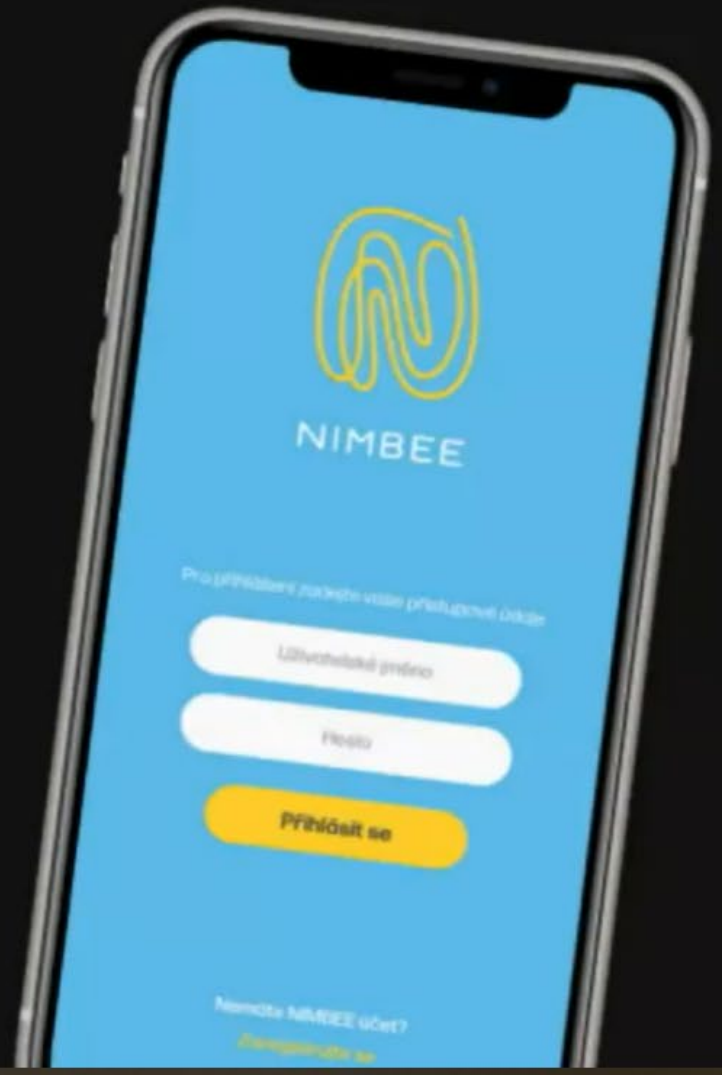
Order charging of your electric car in our app, and leave the rest to us.

Flexibility

Charge anywhere, anytime, just one click away.
Or alternatively, let us recharge your car automatically.

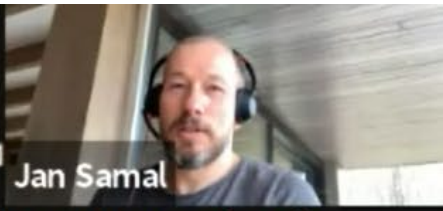
Effectivity

Problem solved in less than one minute.
Do not let the car occupy your mind and time.



Ultimately, NIMBEE will stand on two strong legs – it will be (1) a platform for matching driver's charging needs with independent service providers equipped with mobile chargers, and (2) an aggregator in the electric power system.

Market Opportunities



In fact, the lack of convenient charging options already plagues the EV owners

Drop your car severa
your destination, make your way back by other means, then fetch it when the battery is full, with perfect timing to avoid occupying the charger. **That is frustrating..**

Packed urban environments with only several charging points here and there are often deal-breakers.

Public infrastructure will be unable to keep up with the rapid growth of EV ownership with the gap widening over time.

Very few fast charging options exist in convenient locations.

Charging points not always located where the driver needs them.

Drivers have to specifically look for the charging points, and work their plans around them.

Charging spots are often occupied (61 % of the time inefficiently).

Charging an electric car from 10 to 85 % takes at least 5 hours and requires serious planning.

Even fast charging is wasting at least 20 minutes of owner's valuable time. With average German wage, that is more than 500 € per year, not counting time spent looking for a charger.

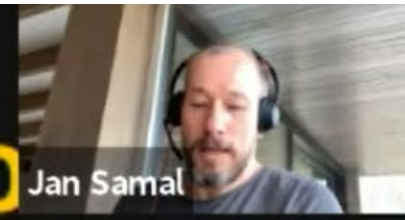
Few charging points

Zero comfort

Time inefficiency

Solution

Unique technology allows us to meet the drivers' needs



In the NIMBEE app, the driver selects the time when the car should be charged and enters the car's location.

Our mobile charging unit will arrive at the set time and place, unload the charger and connect it to the car.

After the charging is finished, our unit collects the charger.

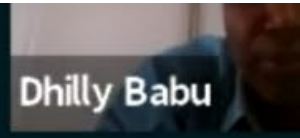
The average time required to charge Tesla Model 3 to 85 % capacity in less than one hour.

Battery-backed Fast Charger

Uniqueness of our charger lies in its mobility, small size, and incredible power – with 40 kW, it is able to fully charge an electric vehicle in less than one hour. Standard chargers take 5-20 hours, fast chargers 20-60 minutes. Our charger further supports OCPP 2.0 protocol and uses an IoT chip with the

Charging unit

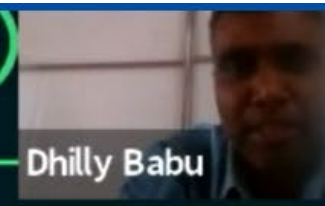
Service is provided by motorized units equipped with trailer that carries a hydraulic arm for easy manipulation with the chargers.



Mobile, battery integrated fast charging for electric vehicles

Fast charging made simple

Problem – Fast charging everywhere?



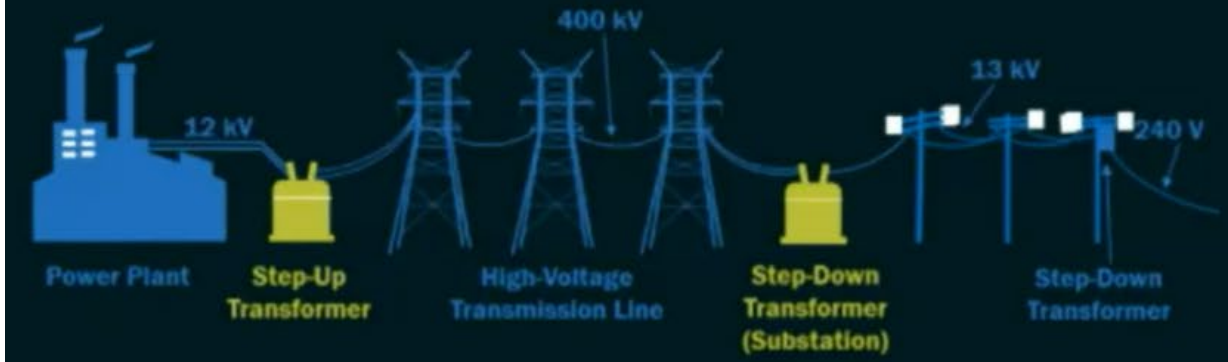
You won't find a fast charger here

High power infrastructure needed – supported only near high voltage lines

90% of the retail locations cannot support fast chargers

Problem

Current fast charging requires strong grid



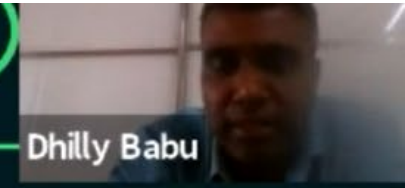
Grid-tied fast charging stations

Expensive infrastructure upg
Long installation proces

Infrastructure costs for deploying fast char
accounts for more than 70% of T

Dhilly

Concept - Distributed energy storage - electric "flush tank"



Slow charging

Fast discharge

Low Power infrastructure

Energy storage (Batteries)

Electric vehicle fast charging

Slow tank fill

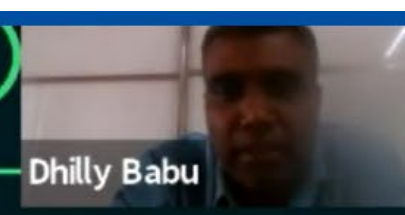
Fast discharge

Plumbing infrastructure

Water storage (Flush tank)

Quick flushing

Product - Mobile EV Fast Charger

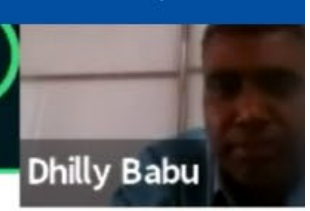


Battery powered electric vehicle fast charger

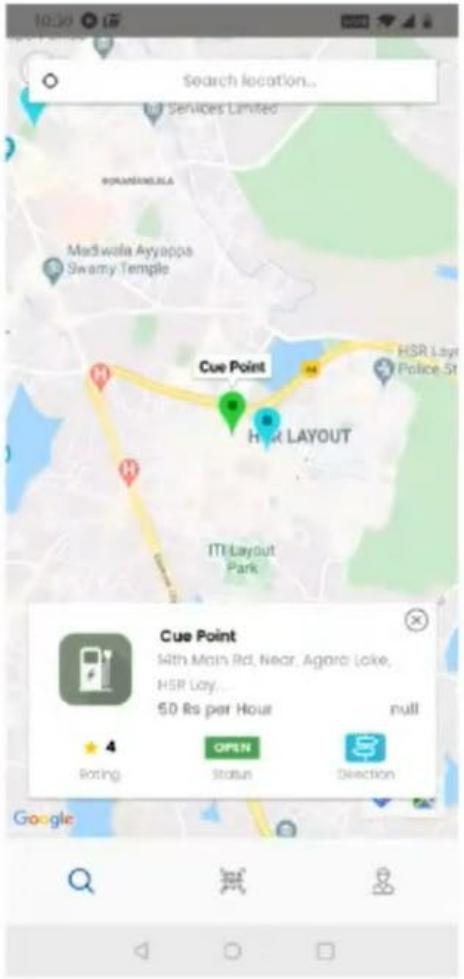
- 15 kW charging capability
- Integrated GB/T Plug
- 40 kWh Li-ion battery storage
- Seamless battery swapping capability
- In-built battery charger
- Connected unit: 4G, Wifi connectivity
- Mobile unit for easy transport

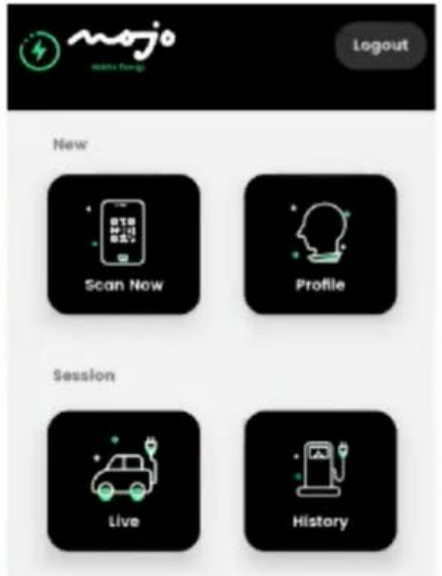
Battery storage + Fast charging technology + Software

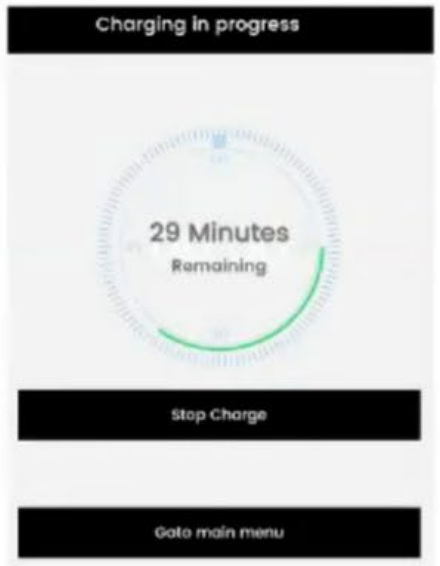
Solution



Software - Mobile & Web platforms to deliver and monitor charging

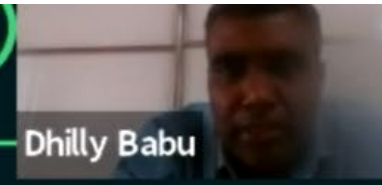






- Mobile application for users to authenticate (QR Code) and deliver charge
- Dashboard to monitor and manage charging sessions
- Online invoicing and payments
- Secured cloud data storage

Use cases



Where does Mobile EV Charger fit?

Retail Public Charging
(Fuel stations, malls, supermarkets, residential communities, commercial complexes)

On-demand Doorstep charging
+
Road side assistance (RSA)

Highway charging

Project

Lampabox

Affordable

Enviromentally Responsible

Future-proof

Wenar

Project Lampabox

EV Charging Station

AC 7,4 kW Single phase
AC 11-22kW Three phases
Dynamic Load Balancing System
TYP 2
Mode 3 IEC61851
LTE & Wi-Fi
Smart Charging & Peak Shaving
V2G/V2H ISO15118-20 ready
Plug&Charge ready
Licznik MID
Vandalproof

BIO POLYMER

MADE in POLAND

EIT Urban Mobility Matchmaking days

March-April 2021

MCAST

Malta College of Arts, Science & Technology

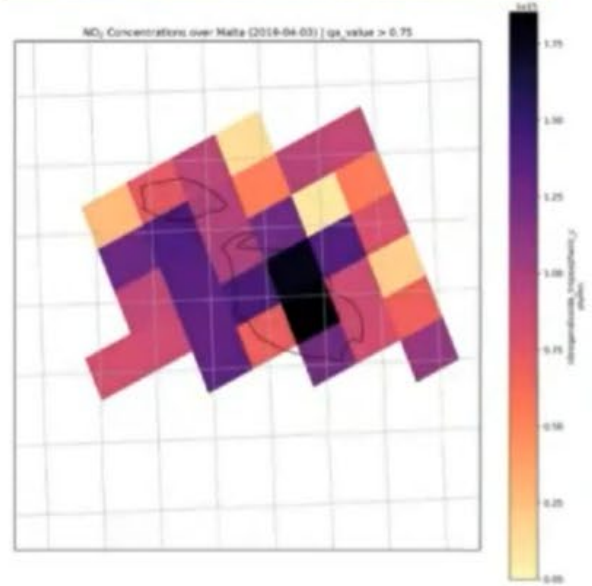
EIT Urban Mobility RIS Hub Malta

MCAST, Project Aegle Foundation & Valletta Design Cluster

zoom

Research areas in Urban Mobility field

- Electro-mobility applications, energy and location management
- Active mobility and micro-mobility
- Sustainable logistics and supply chain management
- Remote sensing techniques for traffic and air quality monitoring
- Feasibility study and planning for Light Rail Transit / Bus Rapid Transit



Looking for collaboration on these and related research topics in research and pilot projects

MCAST
Malta College of Arts, Science & Technology

Potential as a pilot site for Urban Mobility

- MCAST has strong connections with local stakeholders in the transport and mobility field:
  - local and national government
  - businesses and start-ups
  - NGOs and local community

- MCAST campus can serve as a pilot site:
  - Malta's leading vocational education and training institution
  - 7,000 full-time / 4,000 part-time students, nearly 1,000 staff
  - Development of Green Travel Plan

Contact us to connect and collaborate:
Suzanne Maas – suzanne.maas@mcast.edu.mt

Malta College of Arts, Sci

Partner for Innovation Activity in 2021+

Power Management

Lucie Bila

March 2021

PowerHub

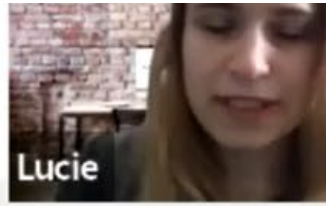
Power for Ventures

eit Urban Mobility

Funded by the European Union

www.powerhub.cz

Power for Ventures since 2017



Akademie věd České republiky

ČZU Česká zemědělská univerzita v Praze

NFF Niedersächsisches Forschungszentrum Fahrzeugtechnik
Ein Zentrum der TU Braunschweig

ALIANCE PRO ENERGETICKOU SOBĚSTAČNOST

Fraunhofer

MOL

INVIEIN CAPITAL

ŠKODA

PRAHA PRAGUE PRAGA PRAG

Panasonic

SPINLAB

XPRENEURS

CARNET

UNTERNEHMERTUM

DIGITAL HUB MOBILITY

Digital Hub Logistics Hamburg

eit Urban Mobility

eit

InnoEnergy
Knowledge Innovation Community

Power Management

Dynamic measurement and consumption control

PRE SIEMENS

TRACTEBEL ONCHO CTAG Centro Tecnológico de Automoción de Galicia

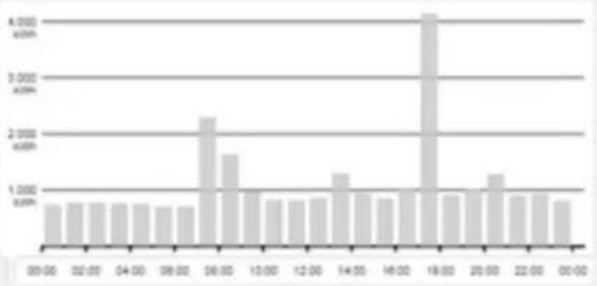
Dedicated reserved power input in e-chargers located in residential and public locations per flat is not efficiently used.

- ➡ very limited e-chargers expansion opportunities
- ➡ inadeqaute distribution of power for charging more BEV at the same time

1.) Power Management software

2.) Mobile application for BEV owners with Advance Payment Schemes

Reserved power input is not actually used in all the flats (13 to 17 kW of reserved power input per flat).



- ➡ **Pilots in 3 cities**
- ➡ **Licensing business model**

Power Management

Dynamic measurement and consumption control

- Application showing the map with the e-chargers available to use with a sufficient energy input.
- Advance Payment Schemes
  - possibility to settle electricity billed to mobility service (monthly fix fee) or to supply point (flat/office/shopping malls)
- Synergic effect of selling energy to customers in one billing system.
- Unique model of electricity sales for BEV users. In range, from home charging, to public charging.

Mobile application for BEV owners

Power Management software

- Usage reserved power input of another devices in the grids nd prioritizing charging in private areas/public garages with more charging spots.
- Opportunity to connect private wallboxes to the distribution system.
- Possibility to access the already booked power input in parallel for private electric vehicle charging.

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Tresoil Biofuels SRL	Waste to Energy	Roger Preston	CEO
Technical University of Madrid	Next generation of clean technologies for future mobility	Jose Maria Lopez	Director of INSIA-UPM
Institut VEDECOM - Electrification projects	Green and intelligent mobility in urban areas	Lynda Halit	Director of the interdisciplinary research department
EVIO - Electrical Mobility	Electric vehicle charging in the palm of your hand	Carlos Almeida	CEO
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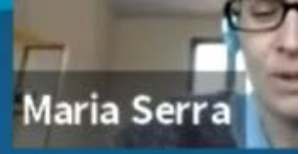


EIT Urban Mobility - Mobility & Energy

Project proposals

Automatic Control Group

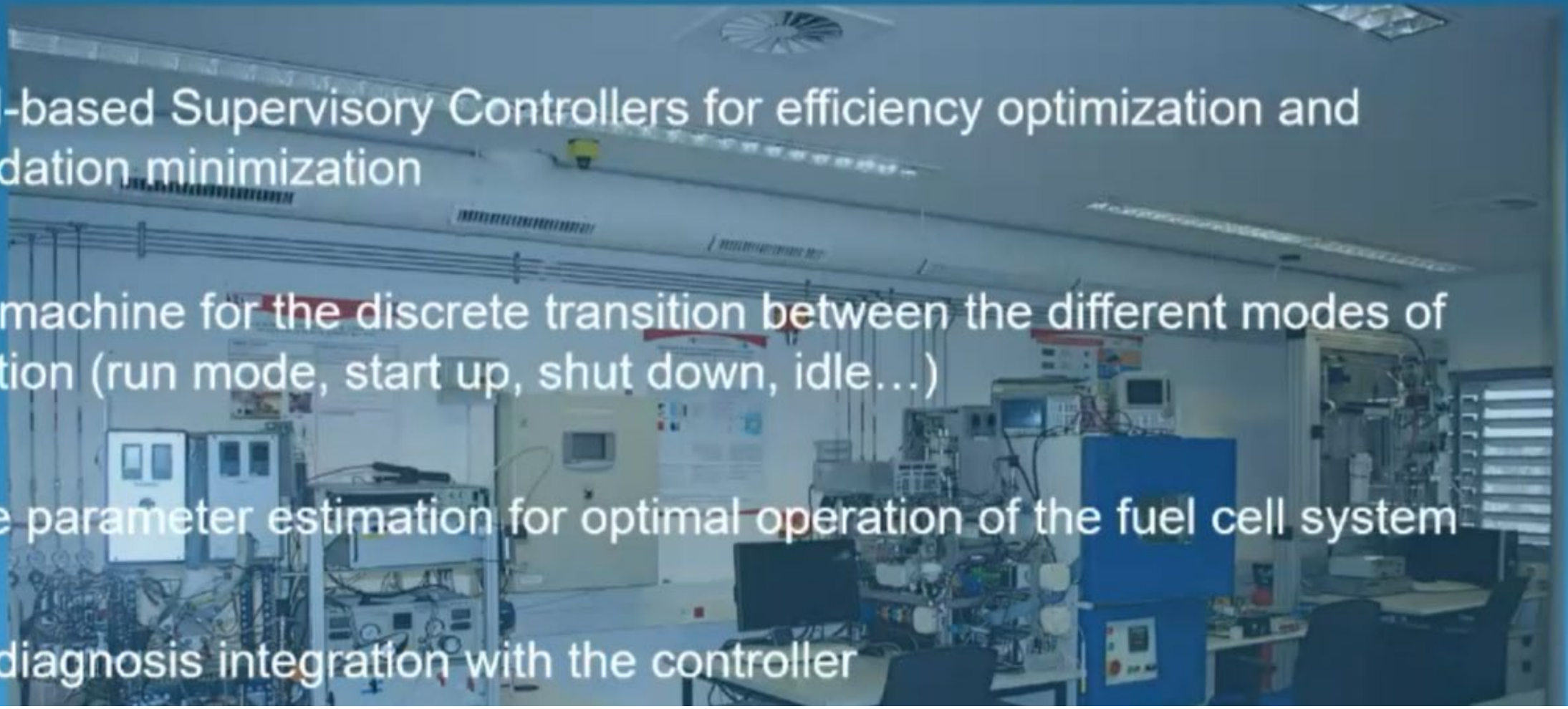
Dr. Maria Serra

UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

Institut de Robòtica i Informàtica Industrial

Development of supervisory controllers for PEM fuel cell power systems in urban vehicles

Maria Serra



- Model-based Supervisory Controllers for efficiency optimization and degradation minimization
- State machine for the discrete transition between the different modes of operation (run mode, start up, shut down, idle…)
- Online parameter estimation for optimal operation of the fuel cell system
- Fault diagnosis integration with the controller

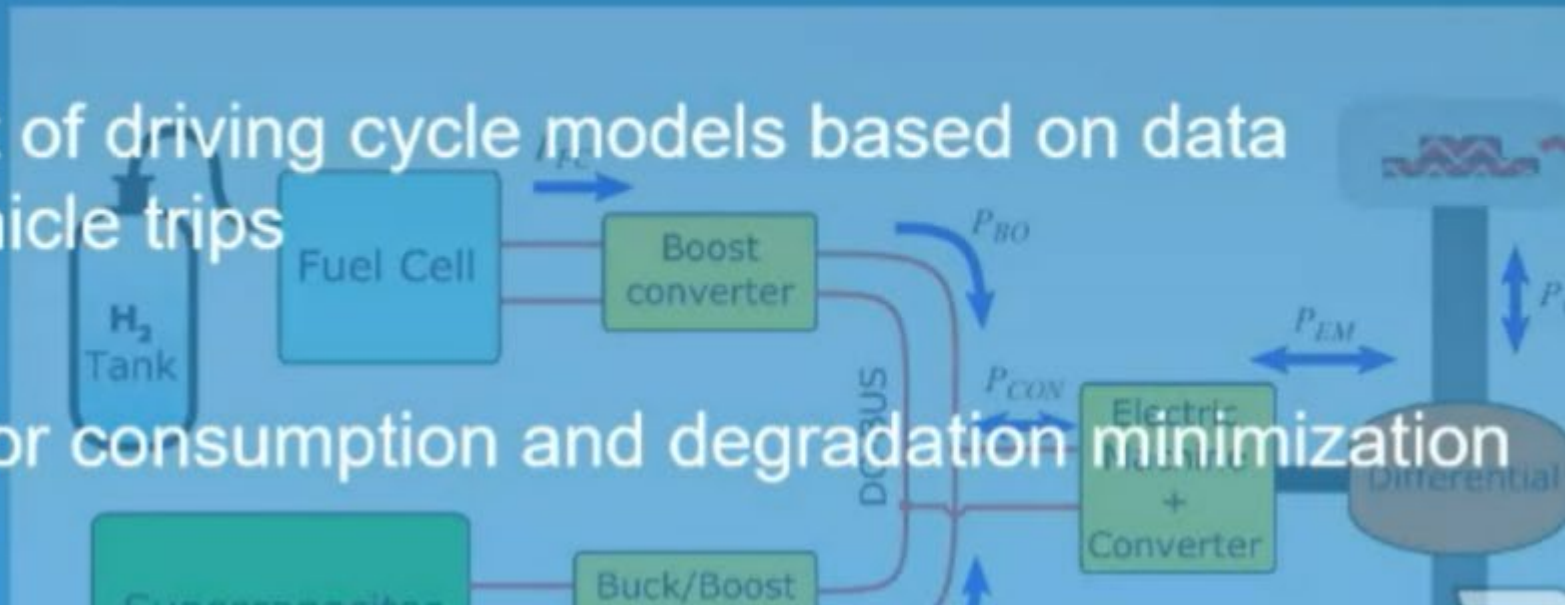
owertrains in urban vehicles

- ybrid powertrains with PEM fuel cells, energy storage elements and egenerative braking.

- Predictive control supported by driving cycle models

- Automatic development of driving cycle models based on data recorded during the vehicle trips

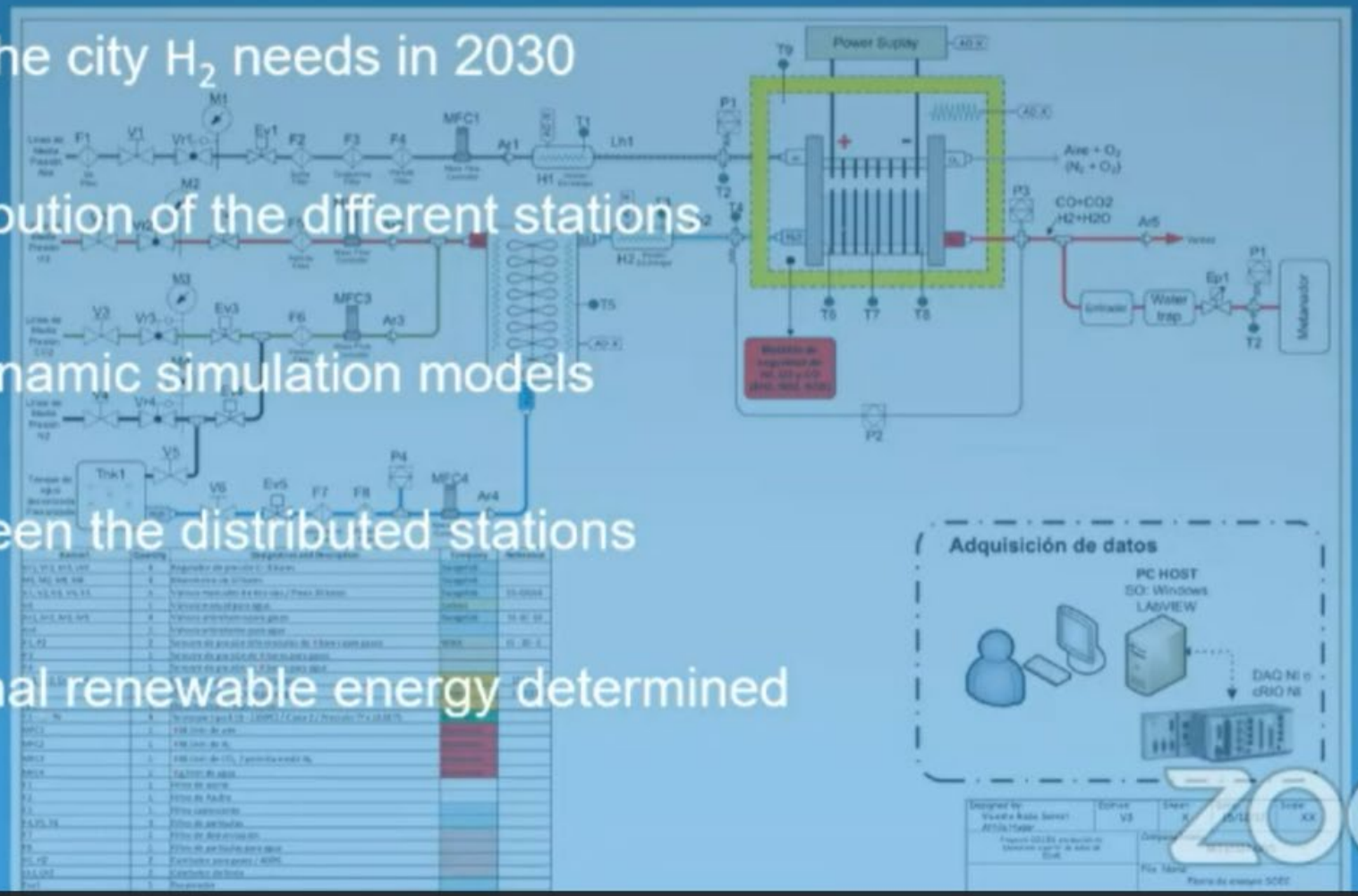
- anagement strategy for consumption and degradation minimization



Study of solid oxide electrolizers H_2 generation for mobility in Barcelona

Maria Serra

- Oriented to cover the city H_2 needs in 2030
- Location and distribution of the different stations
- Study based on dynamic simulation models
- Coordination between the distributed stations
- Necessary additional renewable energy determined



WASTE ELIMINATION

LANDFILL DIVERSION

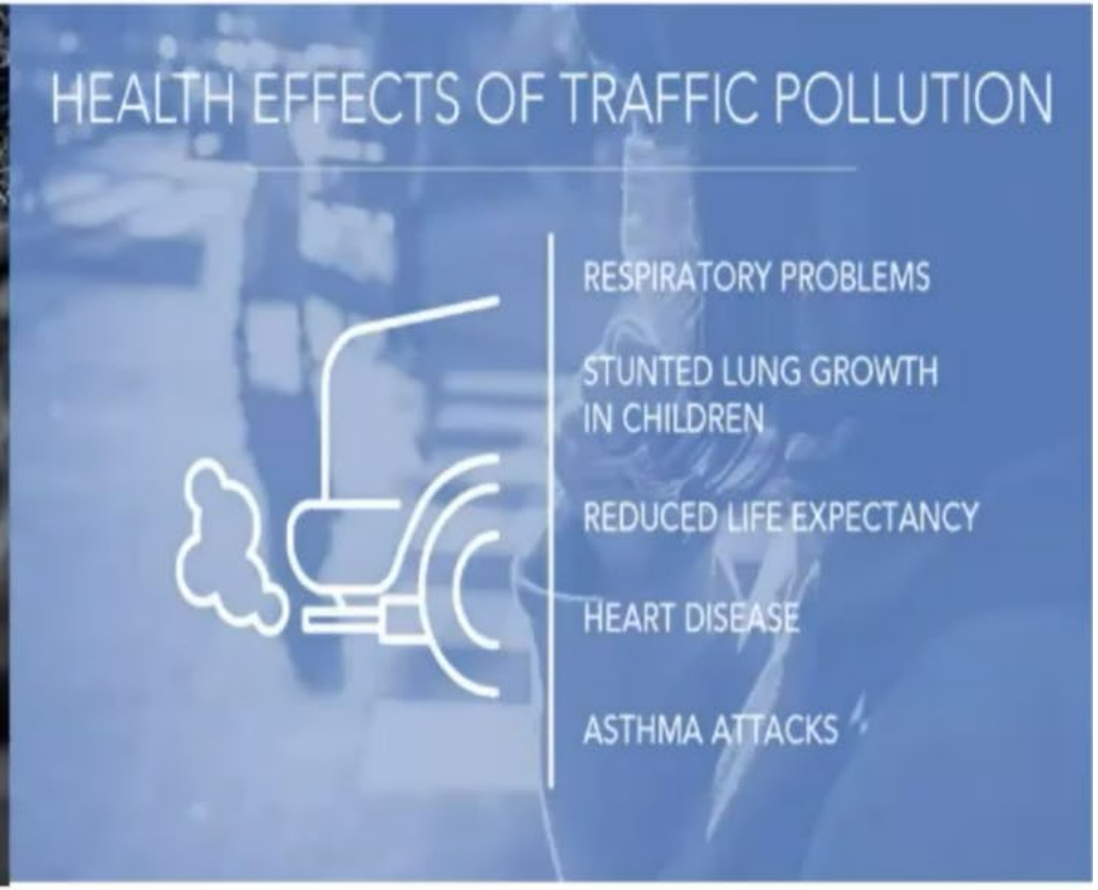
ENERGY RECOVERY

ENERGY CONVERSION

Trés il

BIOFUELS

PROBLEM



ERADICATING TWO MAJOR ISSUES
PLASTIC WASTE & AIR POLUTION

PROCESS

UNRECYCLABLE PLASTIC IS FED INTO THE SYSTEM

IT IS MELTED, VAPOURISED AND CLEANED INTO SYNGAS

ENERGY CONVERSION FROM THE SYNGAS

OUTPUT PRODUCTS

FEEDSTOCK

dmg ENERGY RECOVERY

Power Generation Engine

Hydrogen Extraction

HEAT

ELECTRICITY

58 MWh

H_2

HYDROGEN

2 TONNES

IP PROTECTED

ENVIRONMENT COMPLIANT

HEALTH AND SAFETY CERTIFICATION

SOLUTION

DMG SMALL FOOTPRINT
CLOSED LOOP
NO CHIMNEY
VERY LOW ENMISSIONS
RUNS 24/7/360

High pressure storage of H2 production for distribution

Distribution Green H2

PEEL

Trés oil BIOFUELS

EXCLUSIVITY FOR SE EUROPE

TOYOTA

TOYOTA ASSESSING THE TECHNLOGY FOR THE PAST 18 MONTHS

PEEL ENVIRONMENTAL BUILDING FIRST W2H DMG UNIT IN UK + 11 MORE ON ORDER

DMG FACILITIES

Mode	OUTPUTS		COSTS	
	Net output	H2	Capex	Opex
	MW(e)	tpd	$	$
Hydrogen	1.60	2.00	15,000,000	1,950,000
Power	2.70	0.00	10,000,000	1,150,000

Summary	
Net Present Value (NPV)	$27,761,189
Pre-Tax Payback Months	36.0
Internal Rate of Return (IRR)	40.37%

WORKINGS MODE

Factor	Hydrogen
Power revenues	$1,013,760
Avoided disposal	$1,320,000
H2 revenues	$4,620,000
Total revenues	**$6,953,760**
OPEX	$1,950,000
Net income	**$5,003,760**

DECARBONIZE END USES

Enable the renewable energy system → Decarbonize end uses

Enable **large-scale renewables integration** and **power generation**

Distribute energy across sectors and regions

Act as a **buffer** to increase system resilience

Help decarbonize **transportation**

Help decarbonize **industrial energy** use

Help decarbonize **building heat and power**

Serve as renewable **feedstock** : steel, refineries, chemicals

EIT UM Challenge Area: Mobility and Ener

NEXT GENERATION OF CLEAN TECHNOLOGIES FOR FUTURE MOBILITY

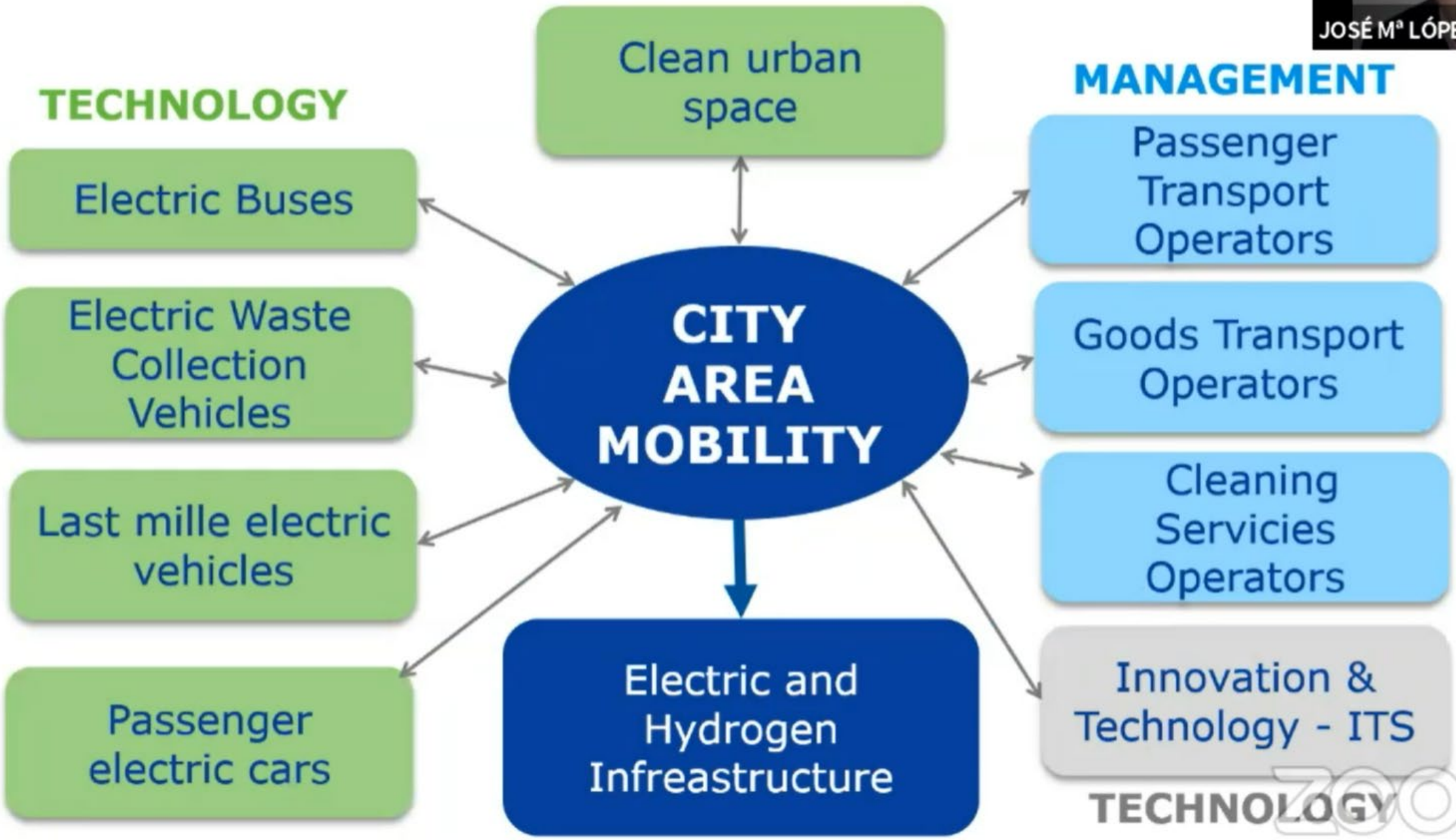
Objectives:

- Develop a new **electrical and hydrogen infrastructure** capable of meeting daily mobility needs.

- Develop a **new digital tool** for connectivity between drivers, passenger and freight operators, and energy operators to optimize the demand for daily service.

- Develop **new** concepts of modular clean **vehicles** adaptable to urban areas to transport of people and goods.

URBAN CLEAN SERVICIES mobility



INSIA – UPM Know-how

- Last mile electric vehicle with fuel cell and hydrogen.
- Heavy electric and hybrid urban waste collection vehicles.
- Electric urban buses.
- Models of consumption and emissions of vehicle fleets.
- Test bench and real cycle experimentation.

LOOKING FOR PARTNERS...

- Cities
- Passenger and goods transport operators
- Cleaning service operators
- IT Developers
- Energy Companies
- Vehicle Manufacturers

Contact info: josemaria.lopez@upm.es

VEDECOM IN THE CENTER OF 3 MAJOR SOCIETY CHALLENGES

To contribute to air quality improvement in urban areas and CO2 massive reduction

By **moving** Electric Vehicle from niche to **mass market**

Vehicle electrification

To offer sustainable, safe and efficient mobility

By **accelerating the introduction of automated cars**, with or without driver

Driving delegation and connectivity

To optimize mobility systems on territories

By **analysing** and **experimenting new services** linked with green, autonomous and connected vehicles

Shared mobility and energy

TRAINING

DEPARTMENT 1: ELECTRIFICATION

2020 Key figures

40
Collaborators
with 6 PhD candidates

10
Disciplines

19
Publications in 2020
(articles & conferences)

23
Deliverables

Training program

Introductory or specialised, theory and application on electrification related topics

Experimental and prototyping facilities

E-Motor prototyping
From design to prototyping

Inductive charging
Technology development and characterisation

Charging infrastructure
Interoperability testing and validation

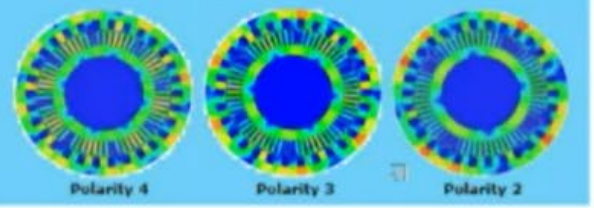
Reliability testing
Power cycling, thermal cycling and failure analysis of power electronics

DEPARTMENT 1: ELECTRIFICATION PROJECTS

48V-40kW e-Drive

Generate 40kW mechanical power with a 48V e-power train while minimising cost and footprint

- *Multi-phase electric motors*
- *Mechatronic integration*
- *Low voltage*



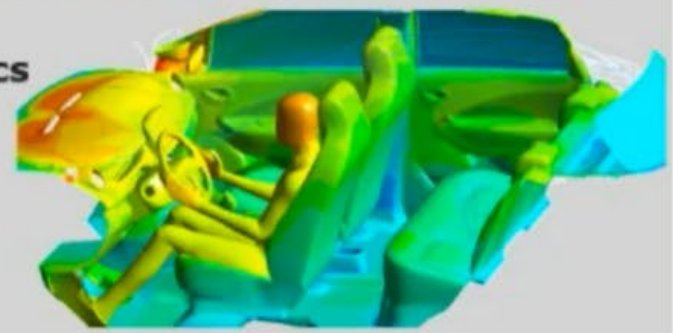
High Density Power Electronics

Increase power density and performance of power converters by deploying Wide-Bandgap chips

GaN	GaN	Embedded SiC
High Power non-insulated DC-DC	DC-DC for onboard chargers	Traction inverter
Higher frequencies without sacrificing efficiency and EMC	Coreless transformers	Embedded modules for higher integration & lower stray inductance

Cabin energy management and occupant thermal comfort

Develop and validate a Multiphysics simulation platform to optimise cabin energy management and occupant thermal comfort



Next generation charging infrastructure

Evaluate new generation EV charging use cases, study interactions between EVs and the electrical grid and the interoperability of communication protocols

- *Plug and Charge*
- *Smart charging*
- *V2G, V2L, V2H, V2V*
- *OCPP, OCPI, ISO-15118*

Wireless inductive charging

Develop, characterise, evaluate, compare and test wireless power transfer systems and technologies. Contribute to their standardisation and guarantee their interoperability

CONNECTED AND AUTOMATED VEHICLES DEPARTMENT

Favor the emergence & roll-out of automated or partially automated vehicles by addressing current technological limitations

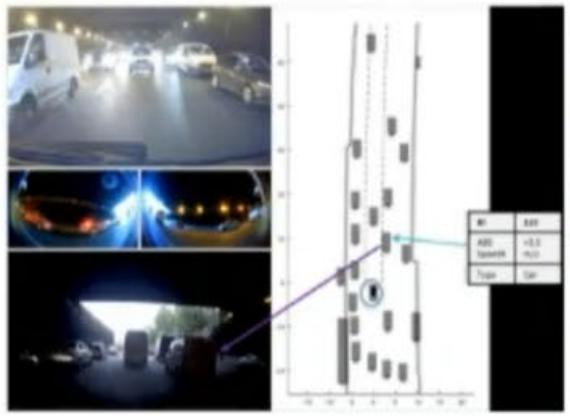
Through 4 main topics

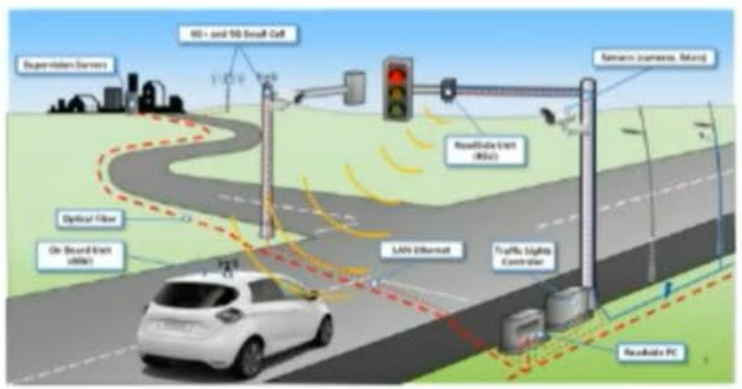
Data:
- Data collection and analysis of real driving situations to identify remarkable scenarios for AV validation and design
- AI methods & tools for automatic data annotation

On-board intelligence:
- Localization (map-aided laser & vision methods)
- Perception (data fusion and VRUs intention prediction)
- Decision-making for intersection crossing

Connectivity:
- Hybrid solutions (G5, LTE, 5G, etc.) and CAVs use-case applications (augmented perception, automatic lane change, etc.)
- Securing communication protocols (anomalous behavior detection)

Infrastructure:
- Assess the current performance of smart sensors for AVs
- Define the right balance between embedded and off-board sensors for safe AVs
- Build adapted perception software for smart infrastructures





CONNECTED AND AUTOMATED VEHICLES DEPARTMENT

40

Collaborators *(including PhD students)*

10

Disciplines *(computer vision, AI, telcom, data science, etc.)*

~40

Publications accepted per year

>20

Industrial and academic partners investing in CAV research in VEDECOM

National partners

STELLANTIS · RENAULT · UTAC CERAM · cnes · MINES ParisTech · TELECOM ParisTech · Continental · transdev the mobility company · tdf · ESTACA · ESIGELEC · CentraleSupélec · Valeo · RATP · esi · easy MILE · Université Gustave Eiffel · CY UNIVERSITÉ · Yvelines Conseil général · ANR · INSTITUT PASCAL · UPMC SORBONNE UNIVERSITÉS · UVSQ université PARIS-SACLAY

European projects

5G-MOBIX (2018-2021)

InDiD (2019-2023)

HEADSTART (2019-2021)

5G-ROUTES (2020-2023)

5GMED (2020-2023)

SHOW (2020-2023)

INCIT-EV (2020-2023)

5GMETA (2020-2023)

Hi-Drive (2021-2024)

DEPARTEMENT 3: NEW MOBILITY SOLUTIONS AND SHARED ENERGIES

35

Collaborators
including 8 PhD students

10

Disciplines

40

Scientific publications/year

50

Delivrables / year

National projects

AUTOCONDUCT
(2016-2021)

SURCA
(2018-2022)

SAM
(2019-2022)

TIGA Rouen
(2020-2022)

NAVET
(ARIANE, TRANSDEV et 78)

3 research teams

AI, mobility flow and system resilience

Human factors, design and acceptance

Technico-economics and business models

European projects

SHOW
(2020-2023)

DrivetotheFuture
(2019-2022)

INCIT-EV
(2020-2023)

SUAvvE
(2019-2022)

HI-DRIVE

Hi-Drive
(2021-2024)

TOPICS AND TESTING TOOLS

Mobility flow and adaptative control
MaaS and resilient systems

Driver's behaviours
Future users
Vulnerable road users and inclusiveness
UX and acceptance
Teaching and nudges

Metaobservatory of new mobility solutions
Incentives of modal shift
Urban logistics and LaaS
Socio-economical impacts
Business models of energetics services
Business models of energy (electric road, hydrogen…)

Driving simulator

Wizard of Oz vehicle for automated driving

Physiological and postural measures

Real-time cameras for bluetooth captation

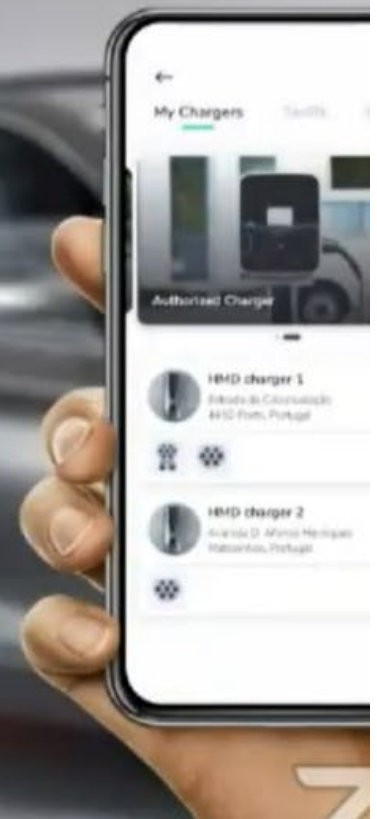
Virtual reality lab

Simulation

- EVIO's multisided and agnostic platform provides services to different type of players in the EV charging ecosystem (ranging from the EV user to the infrastructure manager)

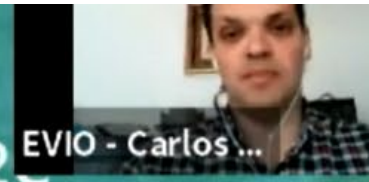
- EVIO's charging network, open access, where anyone can add their private charging station and monetize it

- We promote the use of renewable energy and efficiency in the use of resources, making the connection between the mobility and energy worlds.



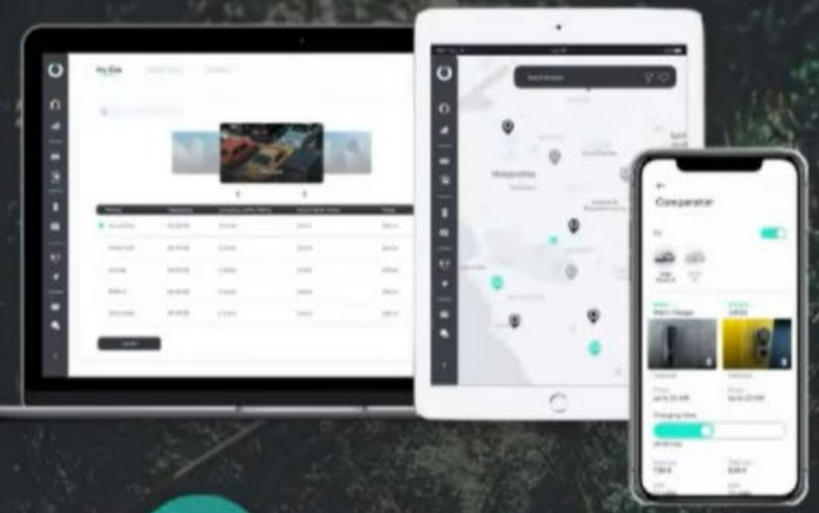
We offer:

- Differentiated solutions and services for Public Sector, B2B2C, B2B and B2C
- Functionalities that promote and allow the EV user to integrate with the EV charging, thus taking decisions more sustainable and use RW energy
- Charging station, users, access and tariff management
- EV Fleet and drivers management
- Energy load balancing
- Best user experience, One App, one account – access and use of several networks and services. Integrating several payment's methods
- Open access to EVIO's EV charging network, where anyone can add their private charging station, monetize it and optimize resources



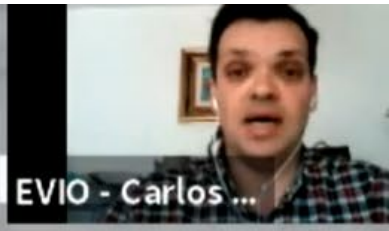
ANYWHERE EVERYWHERE

Opportunities



- Integrate EVIO's charging services in MaaS
- Create a public or private charging network on EVIO's platform
- Use EVIO platform to calculate EV fleet carbon footprint and mitigate it
- New services for EV charging based on Data Analysis
- Use EVIO's platform to interact with EV users to induce behaviours and efficiency in the use of resources
- Automotive OEM integration
- V2H, V2G and RW energy storage integration with EV Charging - Energy prosumer services
- EV related C-ITS services

www.go-evio.com



Contacts:
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Oporto - Portugal
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Cagri Selcuklu
DUCKT™
MICROMOBILITY INFRASTRUCTURE
DOCK, LOCK & CHARGE


In 2030 – 30Million new vehicles.
Looking for charging and parking solutions in Urban Areas
*McKin
* Prediction grew up to 50 million after Covid-19 Pandemic

. Define Micromobility
Charging Standard

PATENT PENDING - PCT/TR

A DOCKING AND RECHARGI
BATTERY POWERED PERSON
VEHICLES

- Functionality of a universal adaptor
- Connectivity features of a charging station
- Scooter ID tracking per adaptor

3 more international patents in 2021

POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

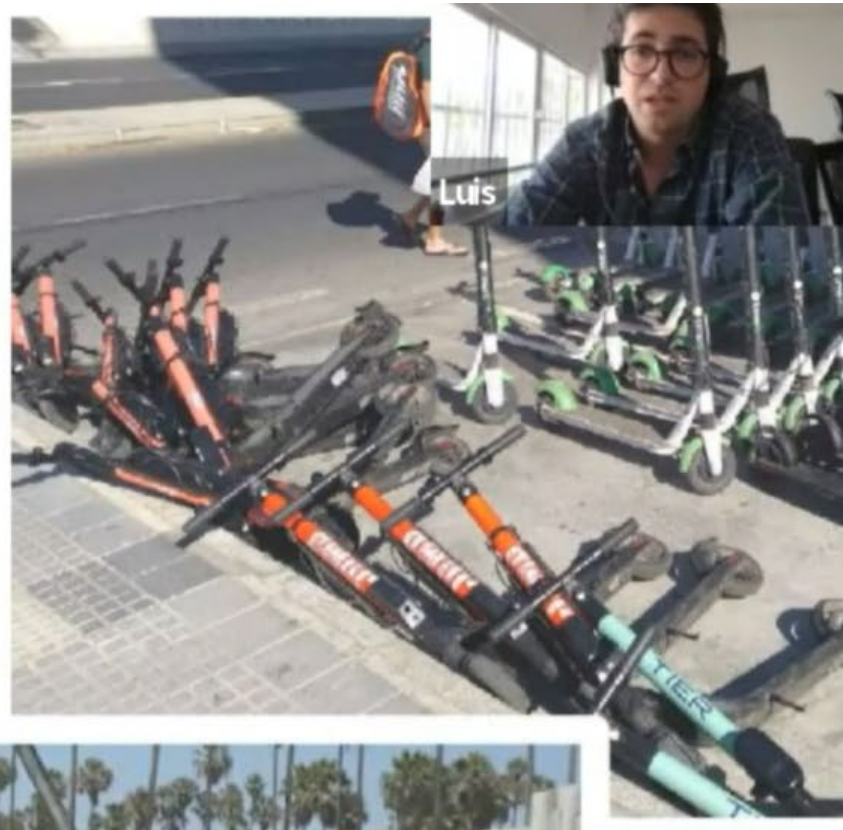
Define & Own infrastructure
Standards for the industry.

Charge all types of vehicles in one solution

1. PROBLEM

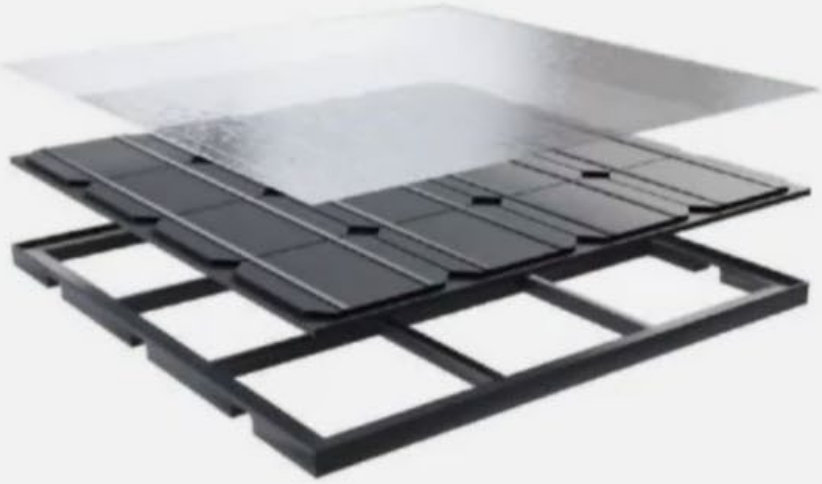
MICRO-MOBILITY SOLUTIONS CHALLENGES

- Lack of secured parking
- Deficient urban integration
- Charging & logistics complexity



A REVOLUTIONARY **SOLAR CHARGING STATION** THAN TO A **MODULAR SOLAR PAVEMENT**

Patented Technology



Solar pavement with a higher resistance than concrete!!

→ 7 sq. meters for 14 e-scooters or e-bikes Solum Station ←


Polina KNO
kot
Dock-based network economics
ZOO