

**HENSHIN**  
G R O U P L T D



The Open Source  
**Platform Ecosystem for Mobility and Energy**

*Il Potenziale innovativo dell'università degli studi di Milano e l'impresa sostenibile*  
8 febbraio 2023



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO



# Technology Integration Hub for Smart City Solutions

**1.** The tech base includes networks of connected devices and sensors

**2.** Smart applications and data-analysis capabilities

**3.** Adoption and usage, often leading to better decisions and behavior change



Traditional infrastructure ...



... (both physical and social)

Source: McKinsey Global Institute Analysis, 2018



**OPEN SOURCE**

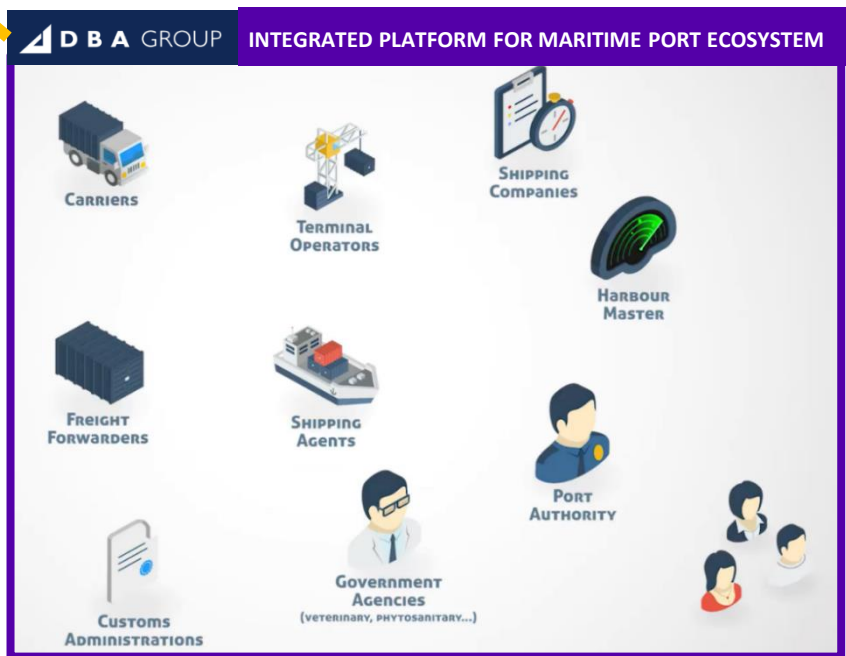
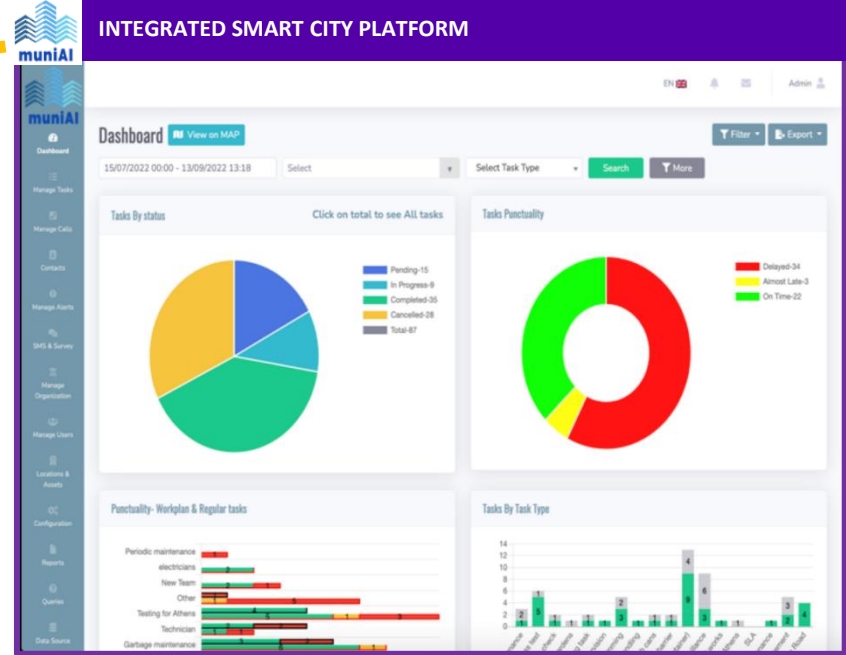
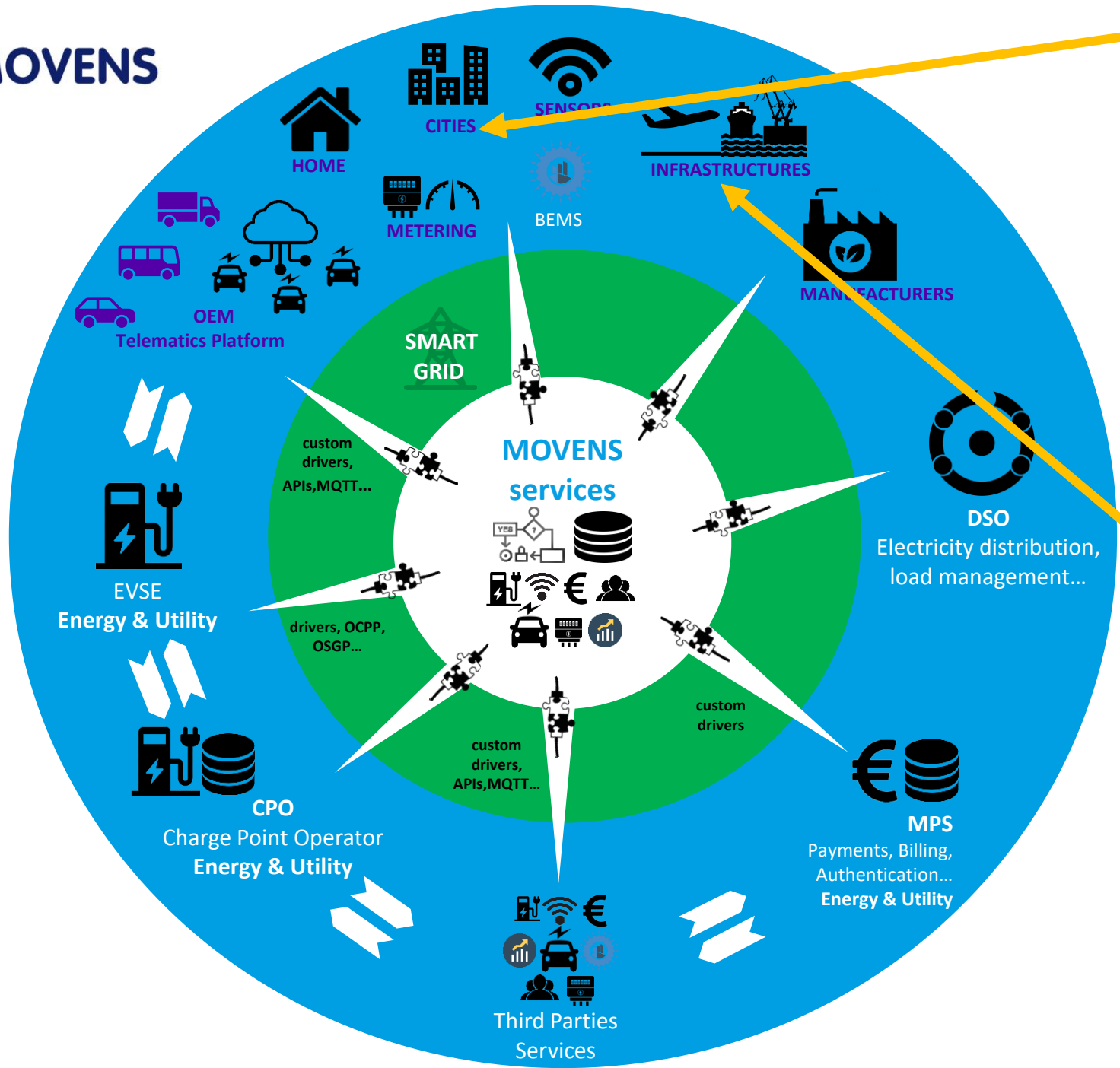


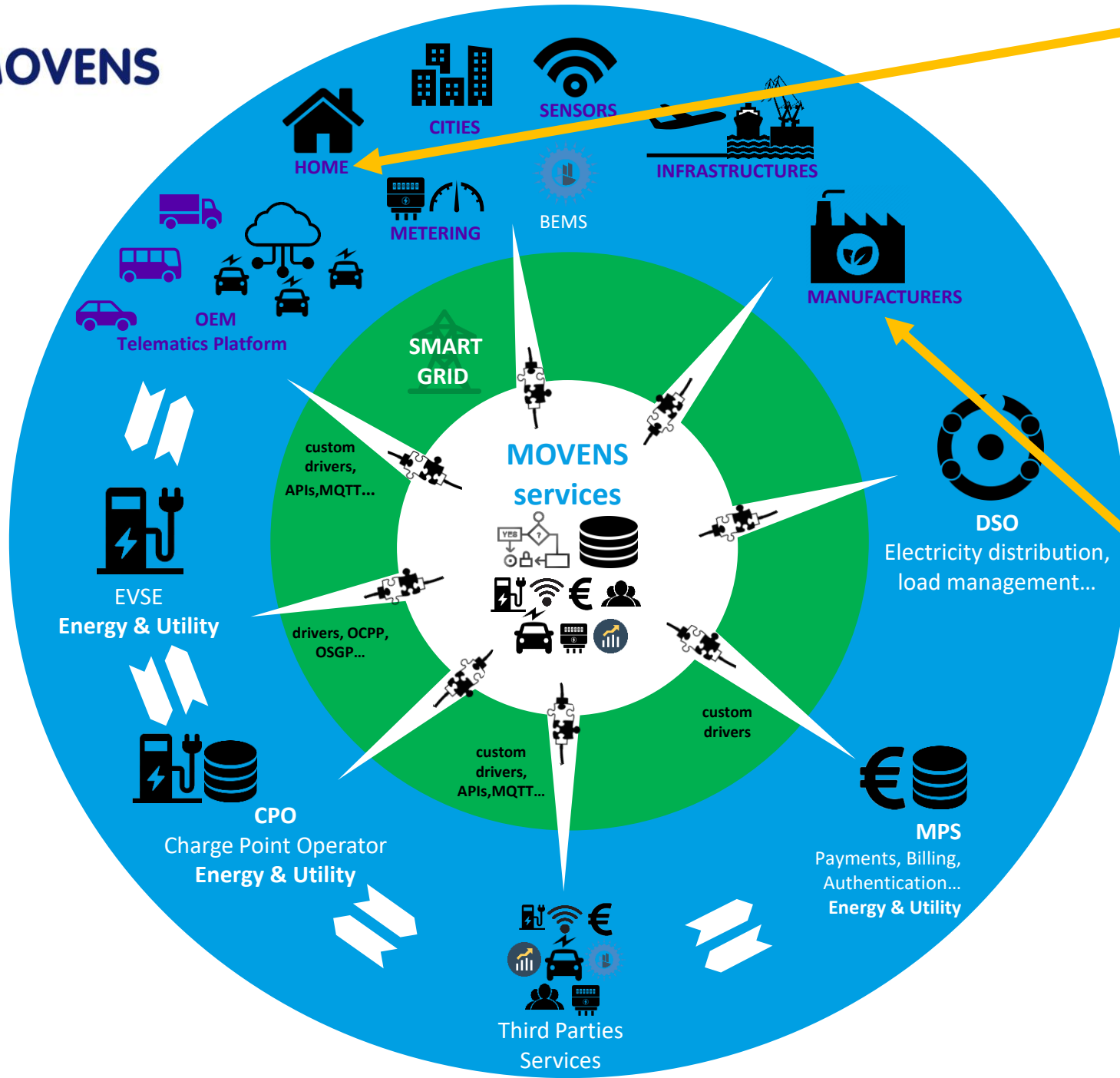
**DESIGNED FOR INTEGRATION**



**GLOBAL STANDARDS**







**IGI WATT**  
energy disaggregation

**ENERGY DISAGGREGATION IN SMART HOME APPLIANCES**

**Performance**  
Based on your consumption, here's your ranking compared to a similar cluster.

High consumption | Low consumption  
Well done, but you can save more energy.

**Consumption Distribution**

- Stand-by
- Dishwasher
- Electric Vehicle
- Fridge
- Small Appliances
- Other

7.7 kWh  
10.31 %  
1.97 €

**Performance indicator to compare energy consumption within a similar cluster**

**Energy disaggregation to discover appliances consumption, cost (€/£/\$) and percentage**

**MOVENS** **RENEWABLE ASSET MANAGEMENT (Solar Manufacturer)**

EP-0001 - Effectika AX-5000-M

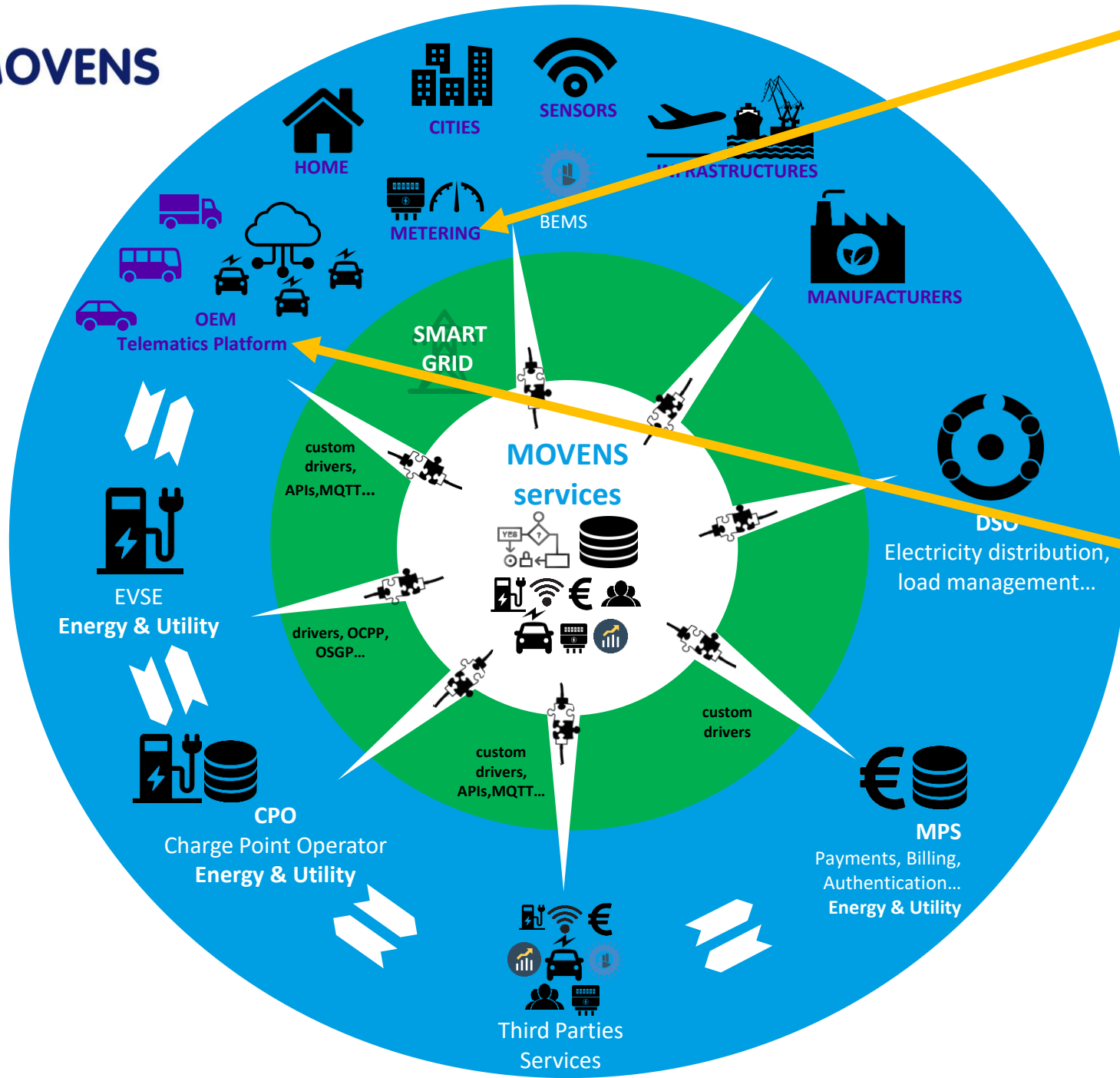
2022/12/04 11:17 - 2022/12/04 11:32

DESELECT ALL

Measure name	Measure value	Residual
BMS (1 measures)		
BMS/SoC	92.5 %	100 %
GPS (2 measures)		
GPS/latitude	45.52007	1 %
GPS/longitude	9.12303	1 %
HVAC (8 measures)		
HVAC/BoilerTemperature	48.0 °C	1 m
HVAC/CompressorHours	8988 h	35 %
HVAC/CondensateInlet	0.2 °C	30 %
HVAC/CondensateOutlet	0.3 °C	29 %
HVAC/ExhaustorInlet	0.0 °C	1 %
HVAC/ExhaustorOutlet	14.0 °C	29 %
HVAC/ExternalTemperature	8.590 °C	1 %
HVAC/PoolerTemperature	39.3 °C	12 %
Inverter (22 measures)		
Inverter/BatteryOff	false	1 %
Inverter/BatteryVoltage	47.90 V	1 m
Inverter/ConfigChange	false	1 %

Compared measures at selected time (6/10)

- Inverter/BatteryVoltage
- Inverter/PanelVoltage
- Inverter/TotalAC/InvPower
- Inverter/TotalAC/BatteryPower
- HVAC/CondensateInlet
- System/BC




### MOVENS IoT BASED CHAIN2 SMART METERING SYSTEM

**OmniaevoHQ**  
e-distribuzione Chain2 OM2

Asset type	Energy	Asset sub-type	Metering
Asset version	2		

Serial number: c3p-7b2f9cd28  
Box MAC address: c3p-7b2f9cd28  
Group: Imola/anta.commerciale.DEMO



**Events**


**Asset dashboard**

### MOVENS CONNECTED VEHICLE ECOSYSTEM

**GE870YM**  
Nissan Leaf

Asset type	Vehicle	Asset sub-type	Car
Asset version	Leaf		

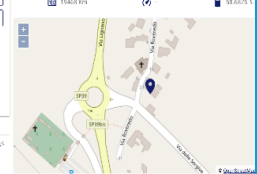
Serial number: 6AMFAZ211612361  
Box MAC address: 42802c459f34  
Ownership: Scania



**Events**

**Realtime data**

Location: 43.81417, 11.324

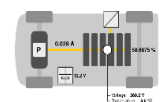


**Maintenance**

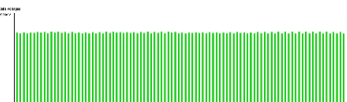
Next maintenance: 10000km / 5000km

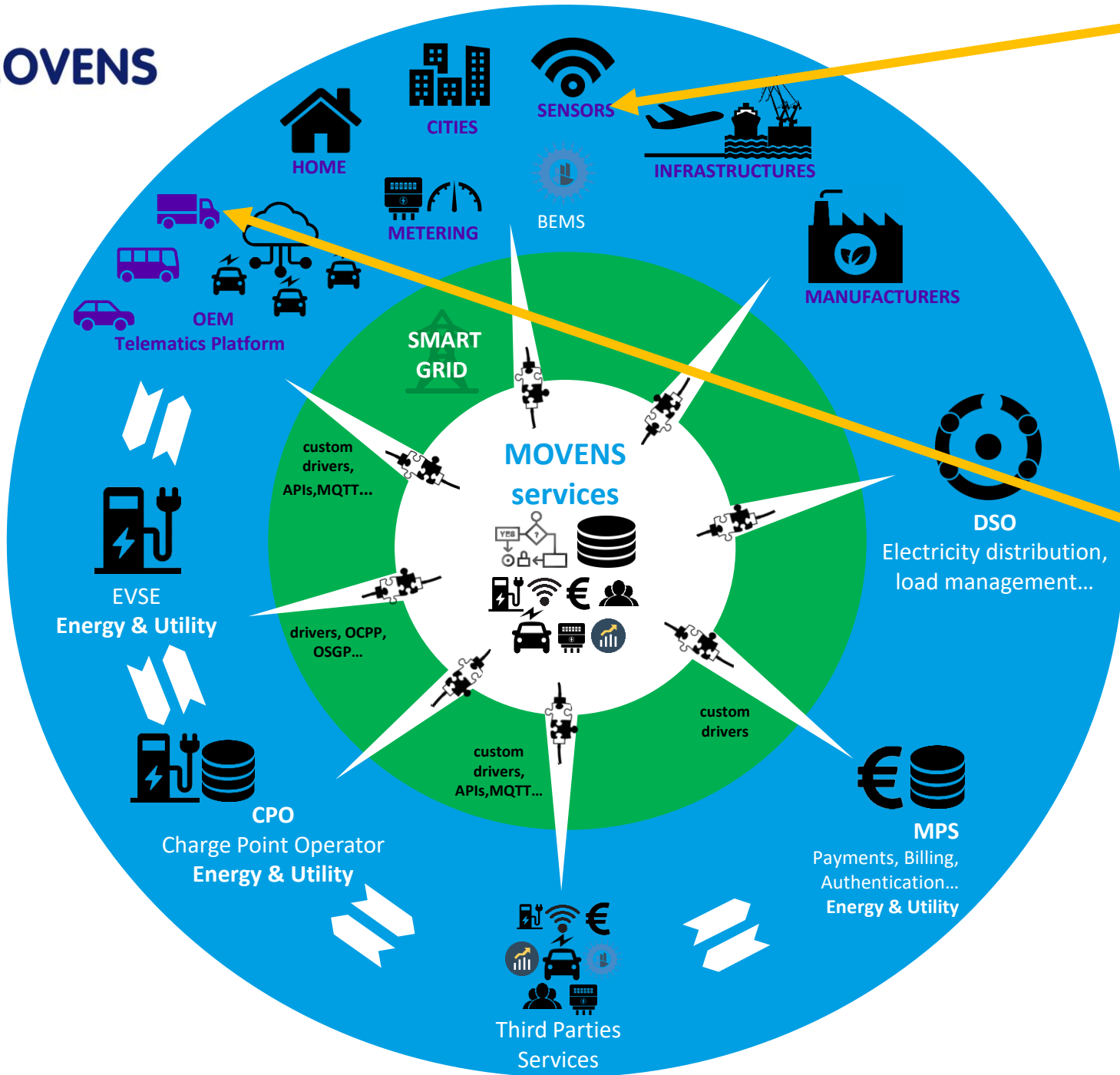
**Measures**

Charger/BatteryVoltage  
Charger/BatteryCurrent  
BMS/Current: 0.029 A  
BMS/bmsVoltage  
BMS/batteryVoltage  
ECU/language  
EDU/robotTemperature



**Asset dashboard**





### MOVENS IoT PLATFORM FOR AIR QUALITY MONITORING

**SMART184**  
AirQino Smart

Asset type: Metering  
Asset version: 1  
Asset sub-type: Air Quality

Serial number: SMART184  
Box MAC address: SMART184  
Ownership: Scopelite

**Events**

**Asset dashboard**

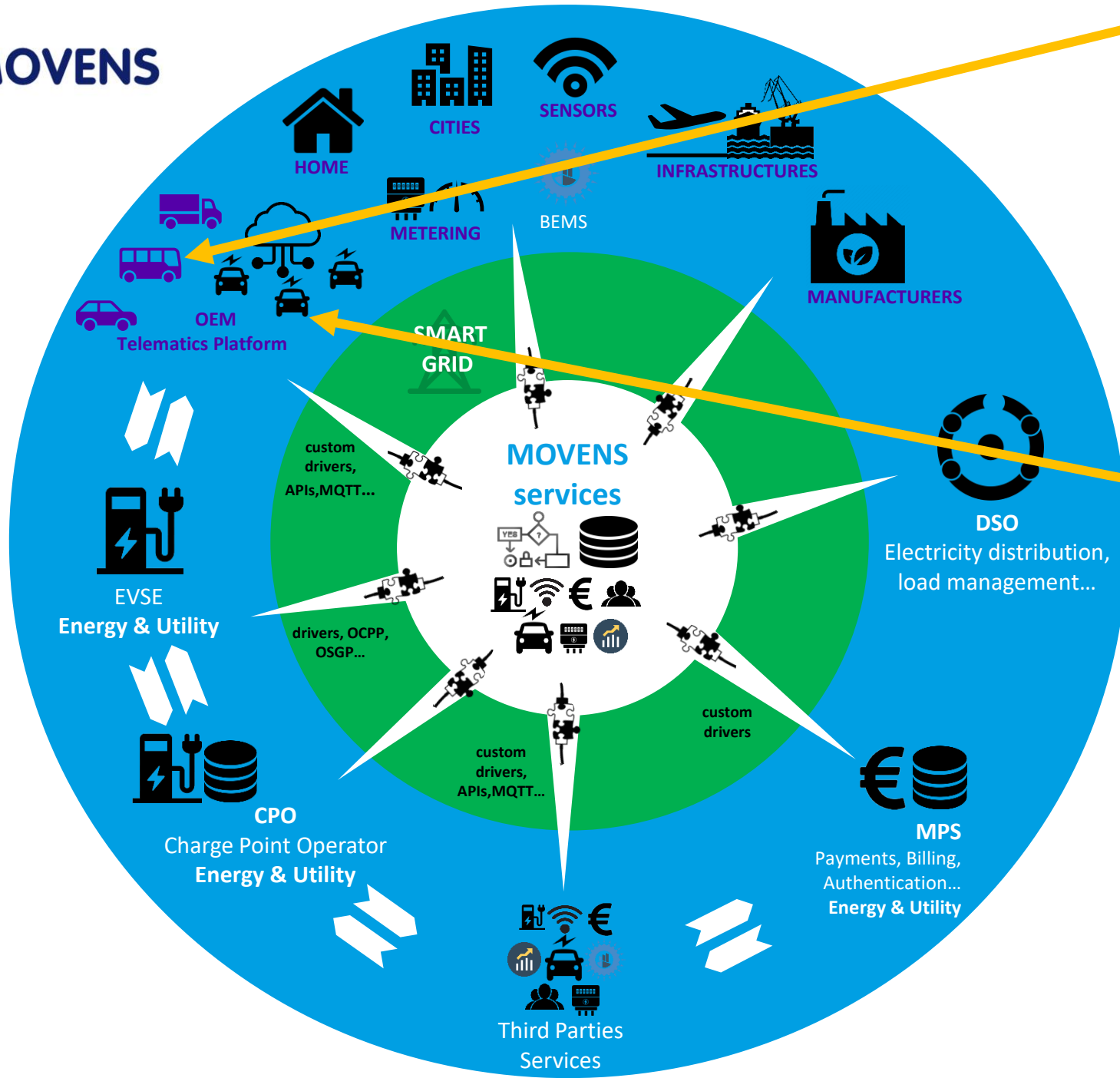
AirQuality/CO2	433.0 ppm	13/01/23
AirQuality/PM10	6.0 µg/m³	13/01/23
AirQuality/PM2.5	2.0 µg/m³	13/01/23
AirQuality/CO	0.2 mg/m³	13/01/23
AirQuality/NO2	12.0 µg/m³	13/01/23
AirQuality/O3	34.2 µg/m³	13/01/23

### MOVENS CONNECTED TRUCKS PLATFORM

Map showing truck locations across the UK.

Vehicle details sidebar:

- Name: [Vehicle Name]
- Status: [Status]
- Location: [Location]
- Category: [Category]
- Manufacturer: [Manufacturer]
- Year: [Year]
- Color: [Color]
- Weight: [Weight]
- Capacity: [Capacity]
- Speed limit: [Speed limit]
- Max speed: [Max speed]
- Max weight: [Max weight]
- Max height: [Max height]
- Max width: [Max width]
- Max length: [Max length]
- Max axle load: [Max axle load]
- Max axle spacing: [Max axle spacing]
- Max suspension: [Max suspension]



### MOVENS ADAPTIVE PLATFORM FOR DYNAMIC TRAVEL MANAGEMENT (Bus)

Line	Stops
PO4A PORCIA-PORDENONE-CORBENONS	
PO4A PORCIA-PORDENONE-CORBENONS	
Trips	
065	065
066	066
067	067
068	068
069	069
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### MOVENS VEHICLE SHARING PLATFORM

**Car data**

- Plate: KE679MT
- Units N°: LJL70W129FG001628
- Position: Lat: 48.70261 Lon: 21.25365
- Indirizzo non trovato
- Battery: 81%

**WHERE IS IT**  
48.70261, 21.25365

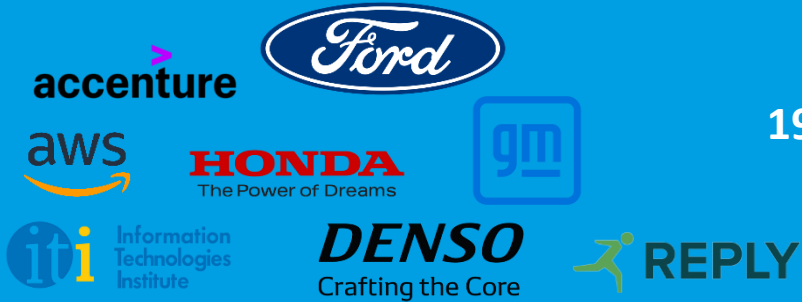
**AUTONOMY**  
81% battery

**LAST CONTACT**  
12-10-2022 13:2

**Last closed trip data**

- Trip start: 12-10-2022 11:17:57
- Trip end: 12-10-2022 11:22:57
- Customer: Kocpet Branislav
- Phone: +4210948008816
- Mobile: +4210948008816
- Events: [None]

Rechargeable Battery Identification Number Standard  
in collaboration with:

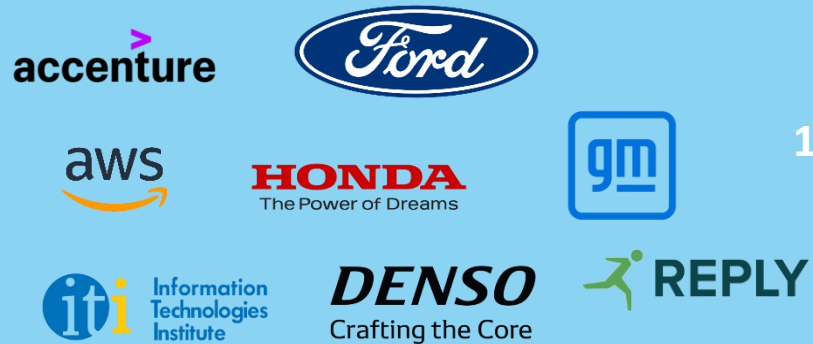


Video

19 Jul 2022

<https://www.youtube.com/watch?v=LhVvt36O8mQ>

First Open Battery Identity Standard  
in collaboration with:



19 Jul 2022

<https://dlt.mobi/bin-release/>



First Standard Supporting MOBI Battery Initiative  
in collaboration with:



31 May 2022

<https://dlt.mobi/soh-release/>

Otonomo, Henshin and wefox  
Collaborate to Empower Fleet Insurance Innovations in

17 Mar 2022

wefox

Nasdaq article:

<https://tinyurl.com/d6kpfdnh>

13 Oct 2021

interview with CEO Domenico Mangiacapra at  
ICA Summit 2021, Munich

Video

[https://www.youtube.com/watch?v=\\_U9kdMqe5vk](https://www.youtube.com/watch?v=_U9kdMqe5vk)



# MOVENS

The Open Source Platform Ecosystem for  
Mobility and Energy

**Make the Future live now**

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