LIGHTING LIVING LAB

Open innovation in Lighting

CISMOB
Interreg Europe

European Union
European Regional
Development Fund

Lighting Living Lab - LLL

In Águeda there is a strong industry of Lighting and eletronics. The creation of a cluster allow companies to work together and take advantage of synergies

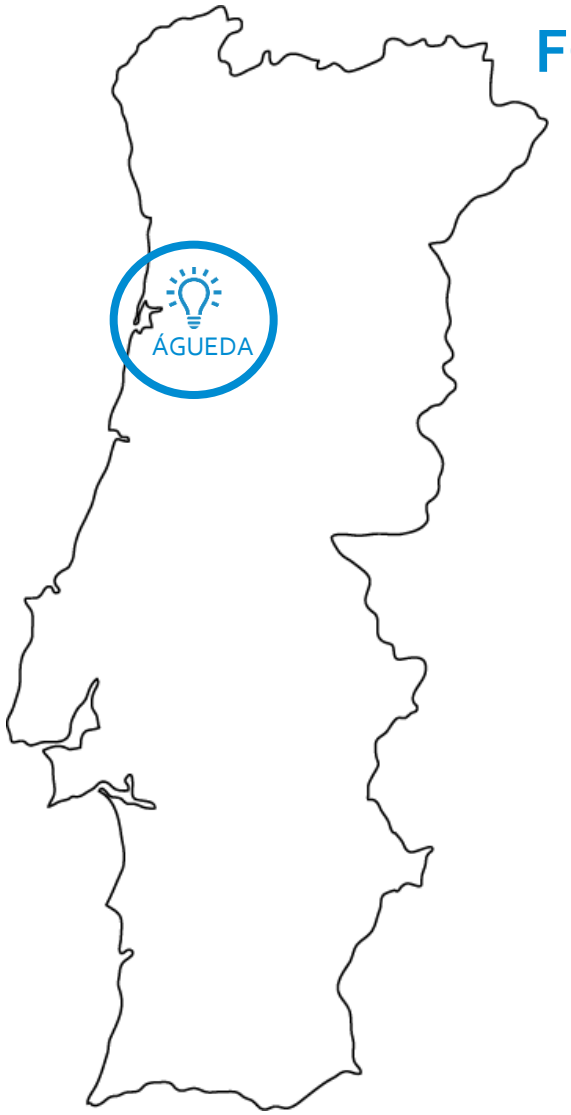
Change of paradigm →

Lighting is not only seen as an utility, but also as a crucial element for the definition of environments, customization of spaces and improvement of comfort

Opportunity →

The opportunity to develop new products/ services/ applications, emerged, with embedded ICT, to create new business and market opportunities, exploring concepts such as Smart Lighting and Eco-friendly Lighting

LIGHTING LIVING LAB



FOUNDATION 2009

LOCATION Águeda Business Incubator, in Aveiro District

MISSION Promote and support open innovation and co-creation

New technologies and applications in the lighting field

Create new service, systems, products, business opportunities

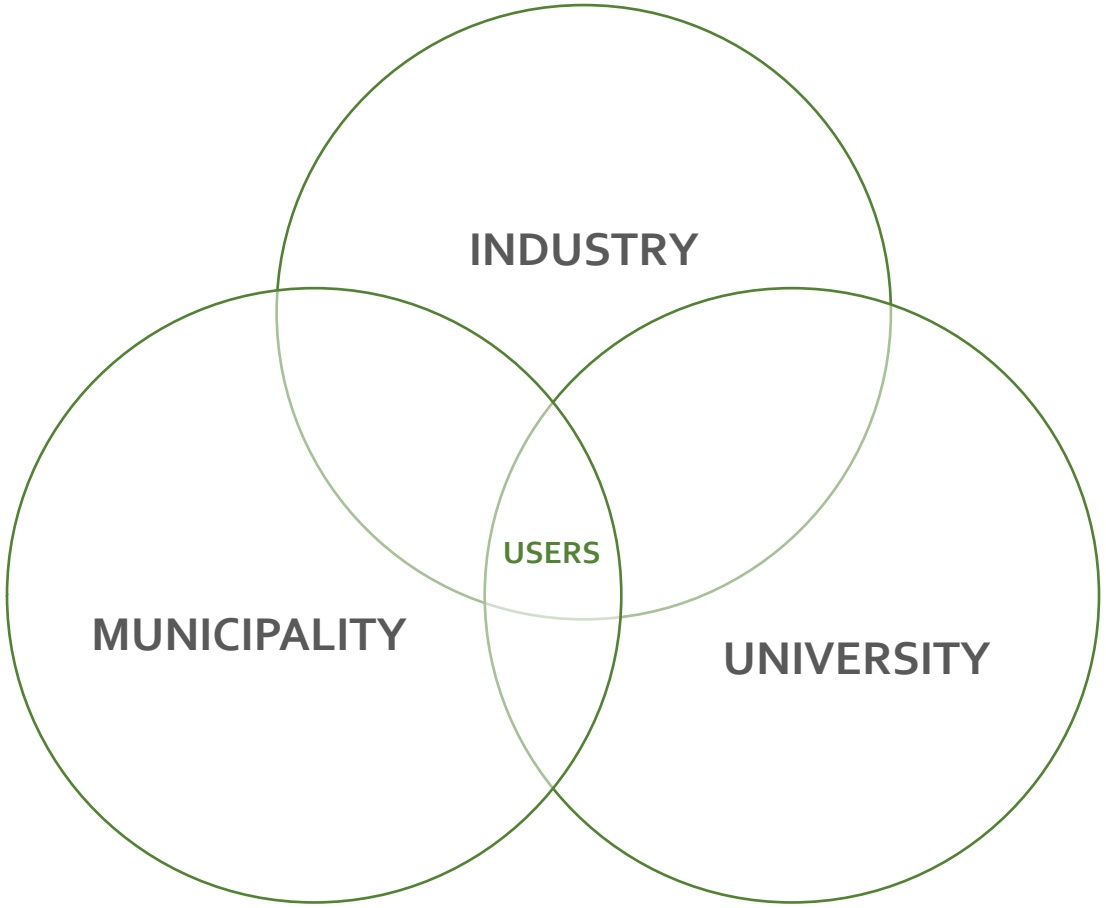
AREAS Indoor and Outdoor Lighting

Information and Communications Technology (ICT)

Energy Efficiency and Smart Cities

LLL is member of European Network of Living Labs

Members & Partners



The idea for the Lab in itself is a direct consequence of a first experience to develop a Triple Helix process in the Aveiro region, centred on the Águeda Municipality.

Living Lab concept improves and enriches this concept of Triple Helix by introducing the users/citizens in the innovation process.

Members & Partners

ÁGUEDA
CÂMARA MUNICIPAL

universidade de aveiro

Globaltronic
spreading technology

lightenjin

e4s

VILA DE MIRA

INOVARIA
REDE DE INOVAÇÃO EM AVEIRO

águeda living lab

FAHR 021.3

UNESCO
United Nations Educational, Scientific and Cultural Organization

International Year of Light 2015

CIDADE DE SEIA

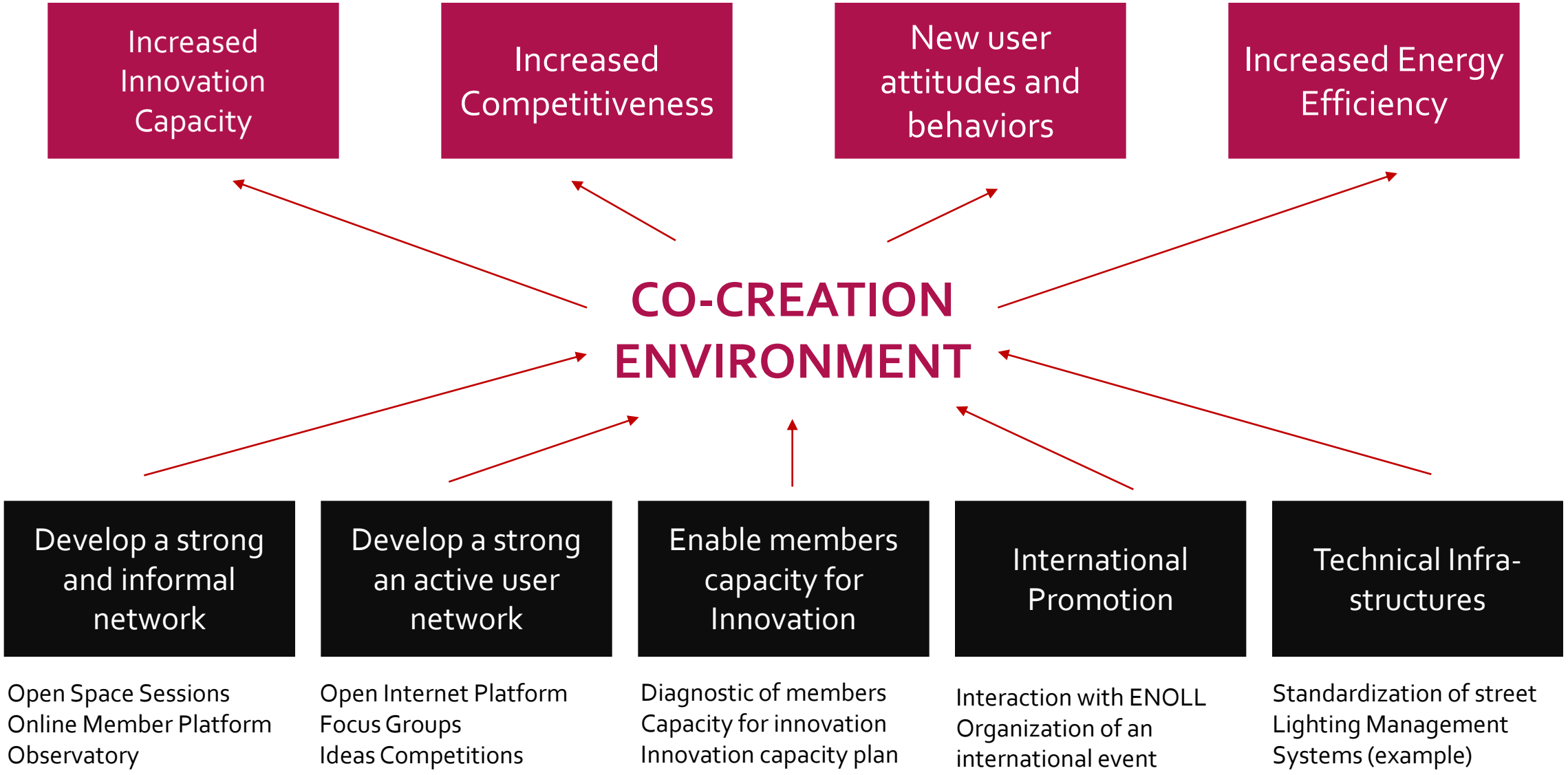
OSA Student Chapter

talents & treasures

Think Light

European Network of Living Labs

Work Methodology to Identify Ideas



[redacted]

examples

Activities

01 CONFERENCES & WORKSHOPS ORGANIZATION


TECHDAYS


LIGHTING
LIVING
LAB


LIGHTING
LIVING
LAB


LIGHTING
LIVING
LAB

[redacted]

examples

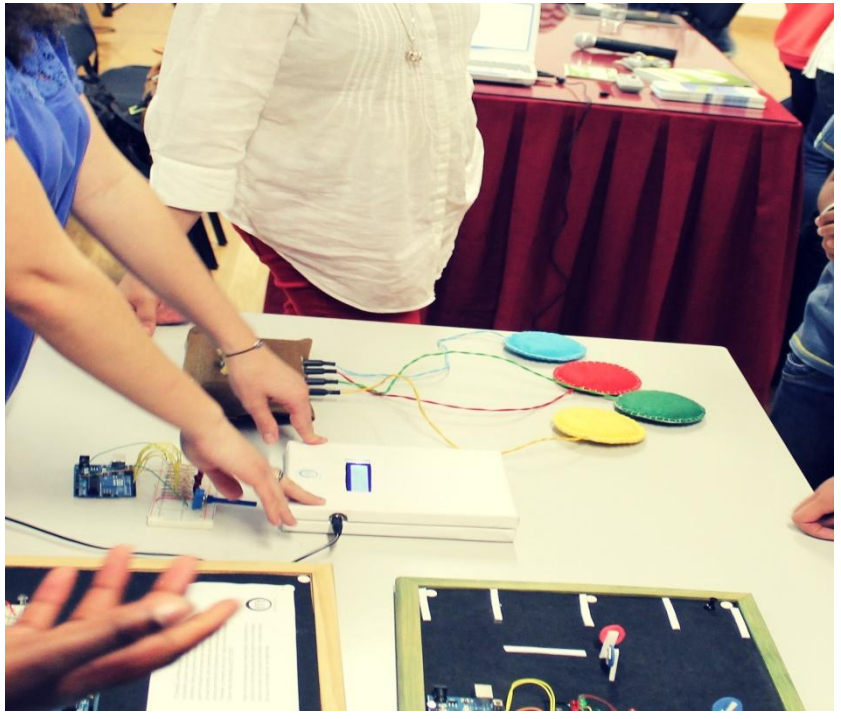
Activities

01 CONFERENCES & WORKSHOPS ORGANIZATION

02 TECHNOLOGY DEMONSTRATIONS


WORLD TOUR
93


CUBO LED 8x8x8
Projeto que funciona como
um display tridimensional
com animações aleatórias.



[redacted]

examples

Activities

01 CONFERENCES & WORKSHOPS ORGANIZATION

02 TECHNOLOGY DEMONSTRATIONS

03 PARTICIPATION IN EXHIBITIONS AND OTHER EVENTS


LIGHTING
LIVING
LAB
Inovação e pesquisa em novas tecnologias e aplicações na área da iluminação


LIGHTING
LIVING
LAB
Inovação e pesquisa em novas tecnologias e aplicações na área da iluminação
geral@lighting-living-lab.pt
http://www.lighting-living-lab.pt/


Globaltronic
Almério e Filhos, Lda


LIGHTING
LIVING
LAB


LIGHTING
LIVING
LAB


agueda
SMARTCITY

[redacted]

examples

Activities

01 CONFERENCES & WORKSHOPS ORGANIZATION

02 TECHNOLOGY DEMONSTRATIONS

03 PARTICIPATION IN EXHIBITIONS AND OTHER EVENTS

04 STUDIES & PROJECTS DEVELOPMENT

SMART CITIES
ENERGY EFFICIENCY

Outdoor Lighting
Indoor Lighting

Energy efficiency in Private Institution Social Solidarity

Monitoring energy consumption of PISS´s by monitoring real-time solutions.

OBJECTIVE

Improving energy use in institutions, limiting the financial and human impact on environment.

PARTNERS: Lighting Living Lab | Municipality of Águeda | E4S.

Energy efficiency in Private Institution Social Solidarity

selection of PISS's
for the pilot project

technical visits

energetic diagnostics

equipment installation –
monitoring of consumption

availability of data in
real-time web platform

report with solutions
of how to increase
energy efficiency

PARTNERS: Lighting Living Lab | Municipality of Águeda | E4S.

Survey about public lighting in Portugal

PARTNERS: Lighting Living Lab | Municipality of Águeda.

Seeks to analyze among

Municipalities the level of satisfaction

and knowledge about public lighting.

LLL presented the results in the national debate in

2017- "Public Lighting, which Future?"

energy & smart cities
conferência internacional
29 e 30 de junho // centro de artes de águeda

Municipal Master Plan for Outdoor Lighting

Normative tool that enables the municipalities to establish strategies focused on energy efficiency towards the evolution of Public Lighting.

PARTNERS: Lighting Living Lab | Municipality of Águeda | E4S.

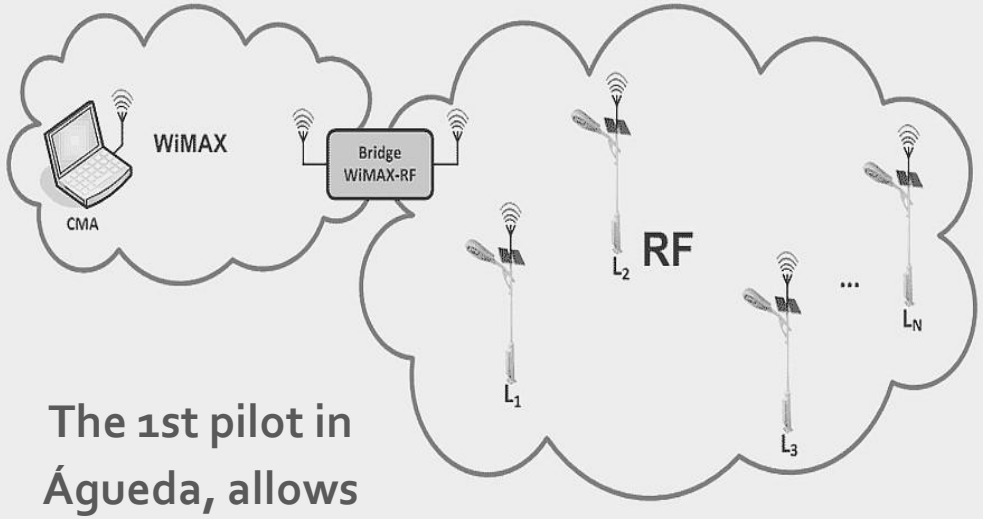
Inlux

Opinion / suggestion of office space users, as changes to the lighting in your workplace.

PARTNERS: Lighting Living Lab | Municipality of Águeda | Artinox | Climar | Exporlux | Indelague | Lightenjin.

Communication on Outdoor Lighting

Co-creation of a standardized communication protocol for interaction between luminaires from different manufacturers. Allows greater flexibility in the management of maintenance, and in case of failure it is possible to mount any model that respects the norm.



The 1st pilot in Águeda, allows remote control using the WIMAX network.

PARTNERS: Lighting Living Lab | Arquiled | Exporlux | Globaltronic | | Municipality of Águeda.

SIGLuzzEE

Software application dedicated to the management of the network of public lighting, allowing the characterization and location of the registration elements.

The user has access to detailed information and the possibility to act on public lighting.

PARTNERS: Lighting Living Lab | School of Technology and Management of Águeda | Municipality of Águeda.

Main Difficulties of LLL

- Access to financing
- Lack of Member's integrated offer
- Strong competition among Members
- Lack of training programs in the region, in the fields of Light Design and Product Design, and others programs related

URBAN ART

Digital Programming
Interactivity

House of Cards

Castle of cards with interactive LED lighting and photographs of Águeda

52 letters illuminated with LED technology

Partners: Lighting Living Lab | Câmara Municipal de Águeda | Wee Events | Globaltronic | Lightenjin

Porto Light Experience

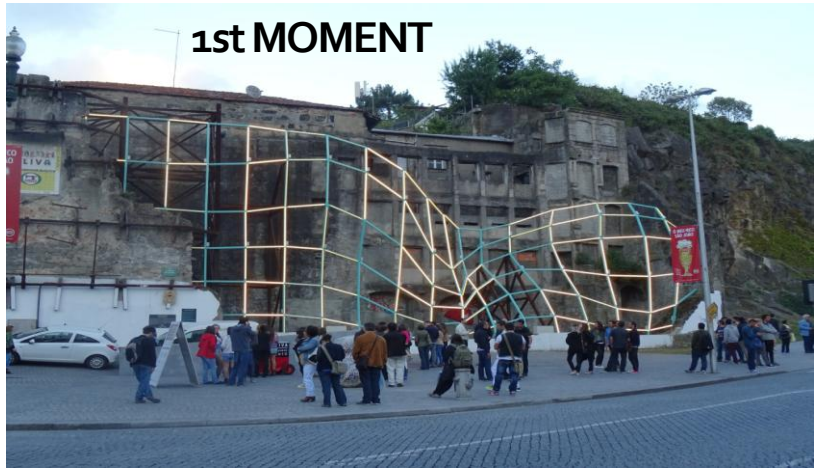
Lighting and digital programming on artistic intervention ***METAMORFOSE*** from architects of FAHR 021.3.

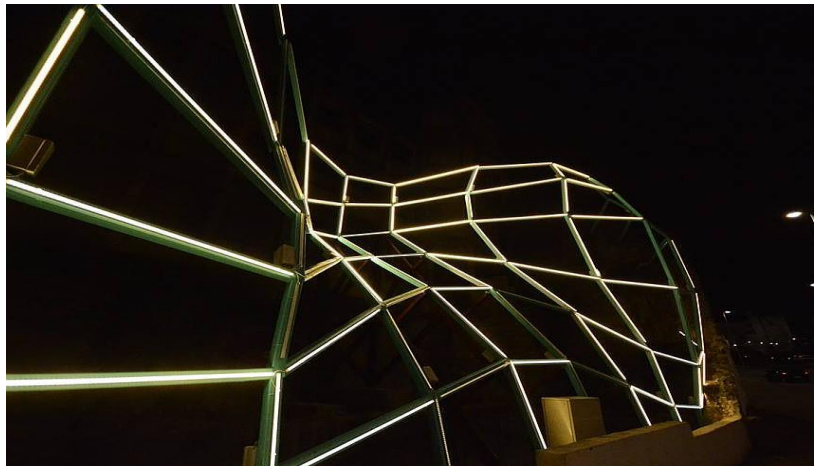
The interactive light experience
was characterized by **3 moments**

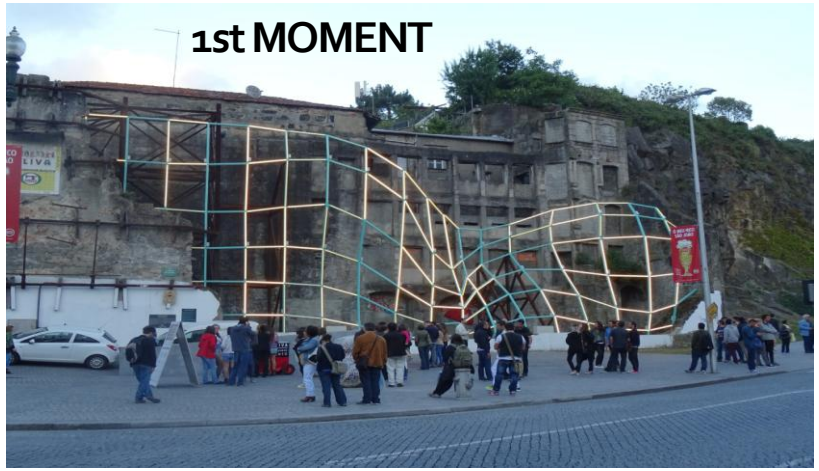
Porto's city celebrations

More than 20.800 LEDS

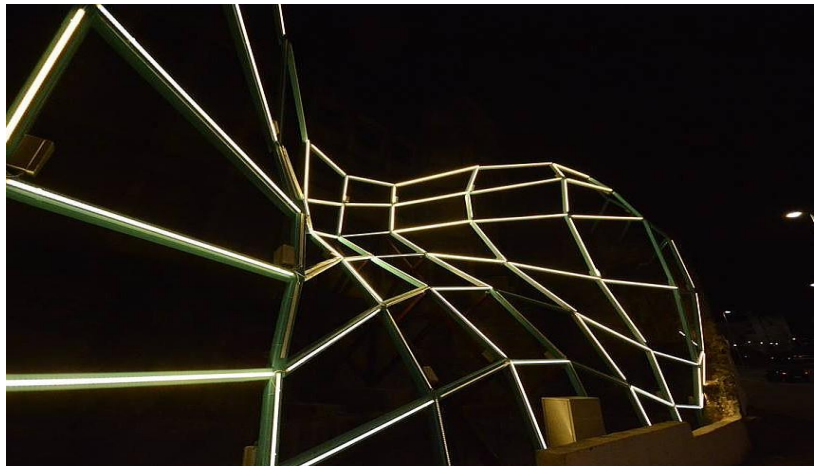
PARTNERS: Lighting Living Lab | FAHR 021.3 | Think Light | Globaltronic | Lightenjin.

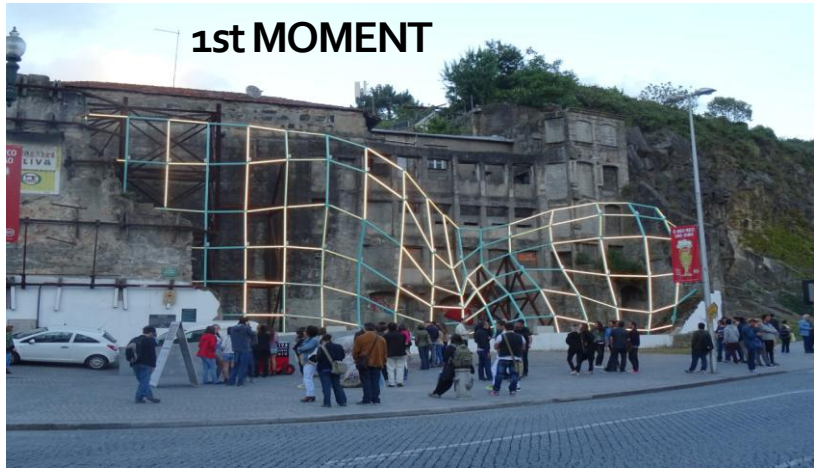

1st MOMENT




1st MOMENT

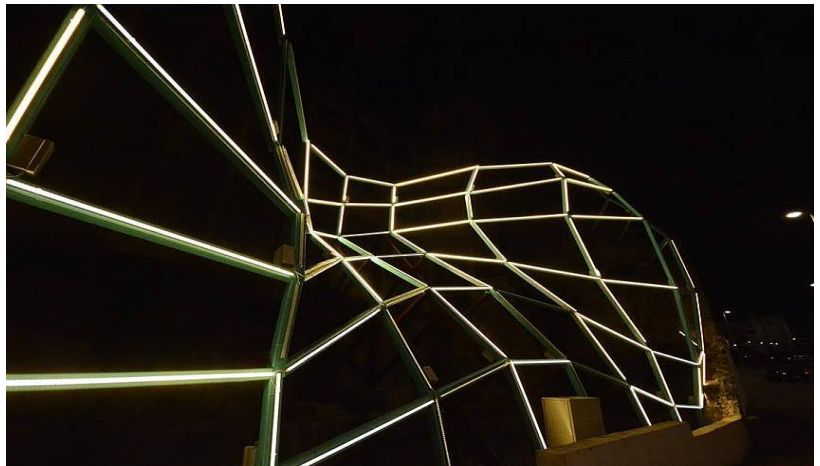

2nd MOMENT




1st MOMENT

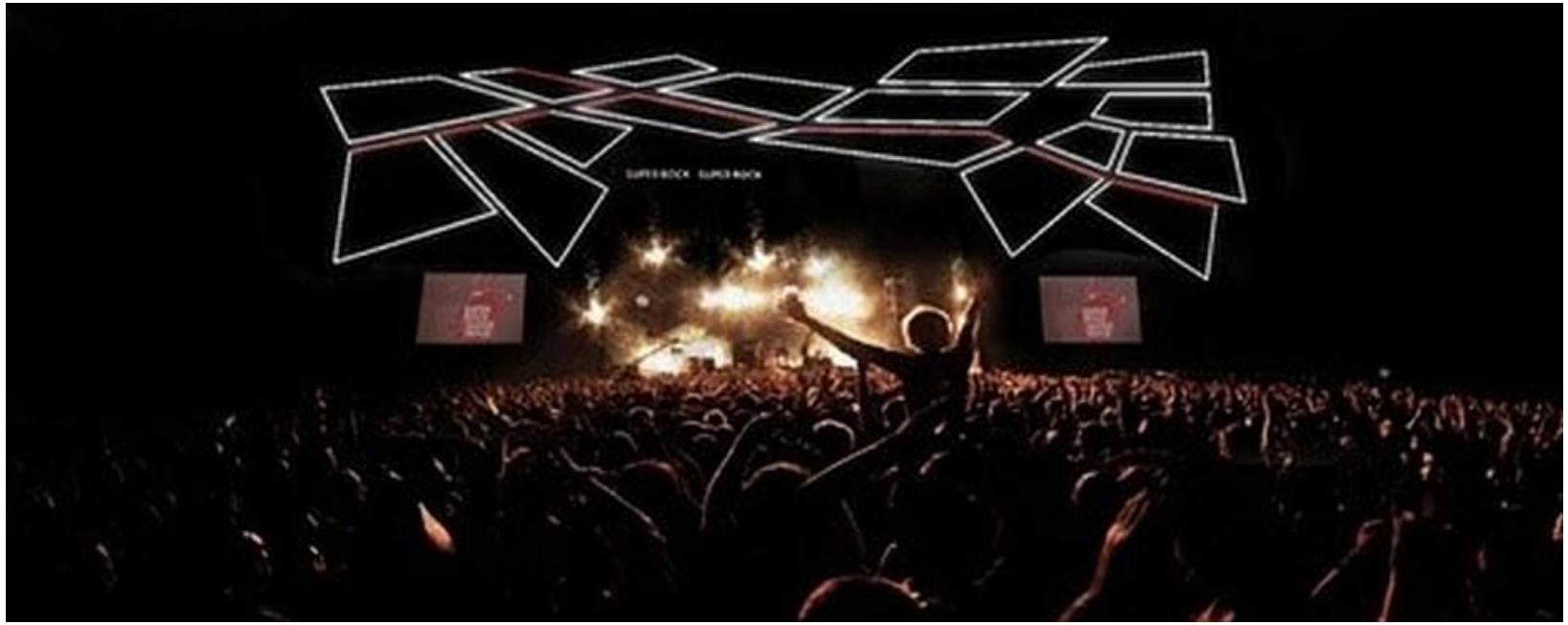

2nd MOMENT


3rd MOMENT



Stimulus

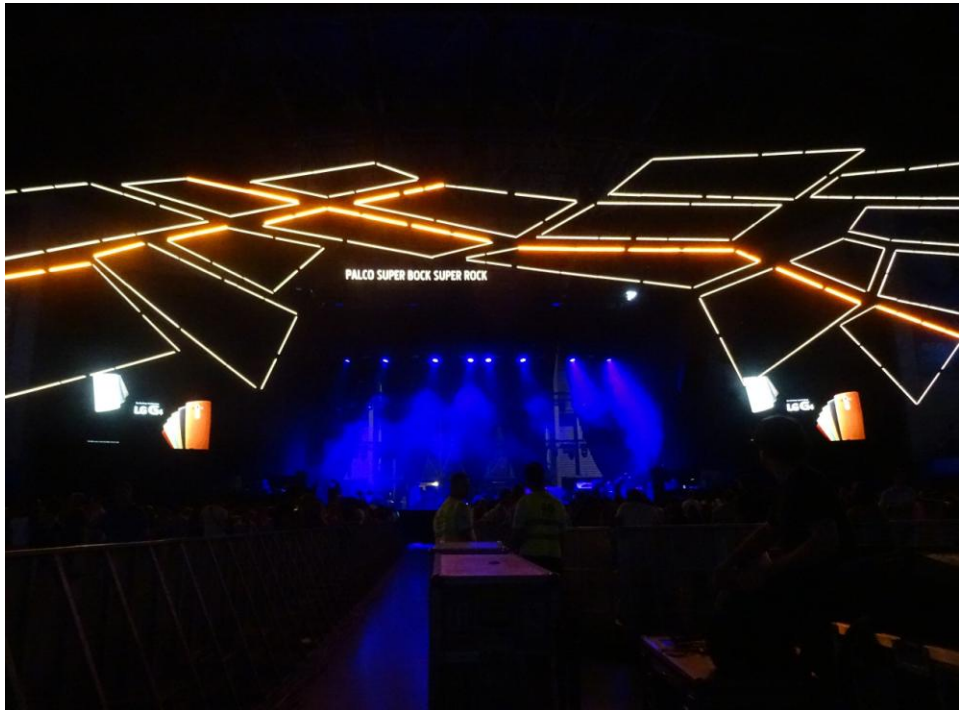
Light's Structure of the MEO ARENA stage in 21st SBSR

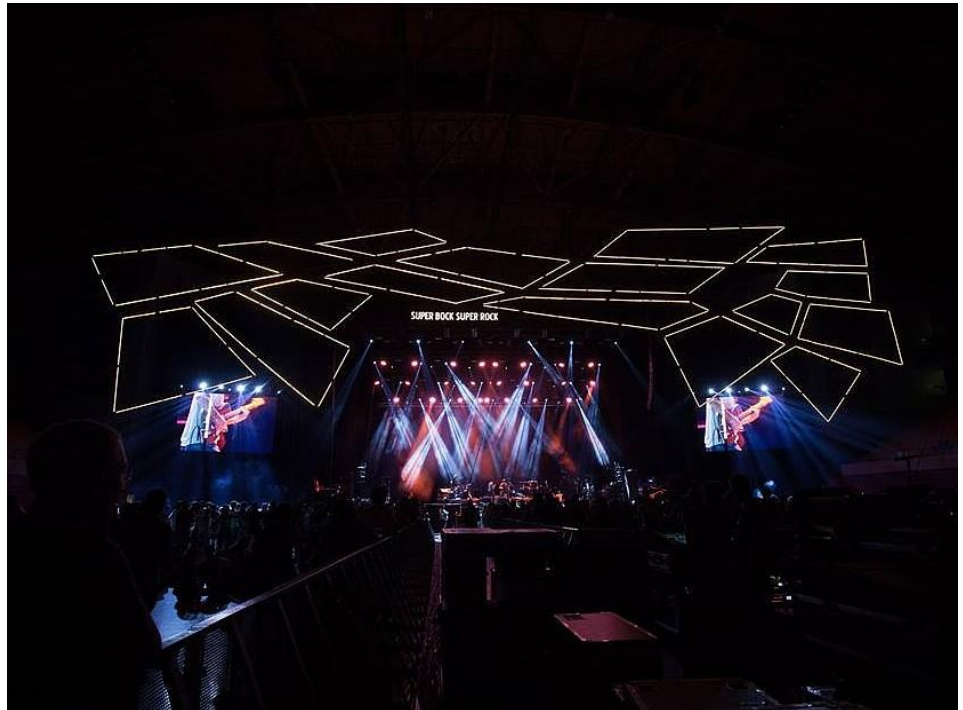


- 17 light frames and 70 segments controlled
- total of 20.280 LEDs

"A magnificent piece that combines powerful lights of the stage, and amplifies the experience of live music. It is what it is the SBSR, an experience (...)"

Journal: Observador | 17-07-2015





PARTNERS: Lighting Living Lab | FAHR 021.3 | Think Light | Globaltronic | Lightenjin

NatALLL

Interactive Christmas trees shining with adequate Intensity depending on the player's speed.

15 trees and 55 bicycle rims illuminated by 4.630 LEDs




PARTNERS: Lighting Living Lab | Municipality of Águeda | Talents & Treasures | Emaj | Globaltronic | Agueda TV | Collective Nora | Utilzás | Miralago | Órbita | Quatripneus.

Each path corresponds to one color (red, green and blue). To the higher speed, correspond the greater brightness.

The RGB color model is used to create various colors

Example: Purple color, is made by mixing equal amounts of red and blue light;
in this case crossing at the same time on the red and blue path

Mobility

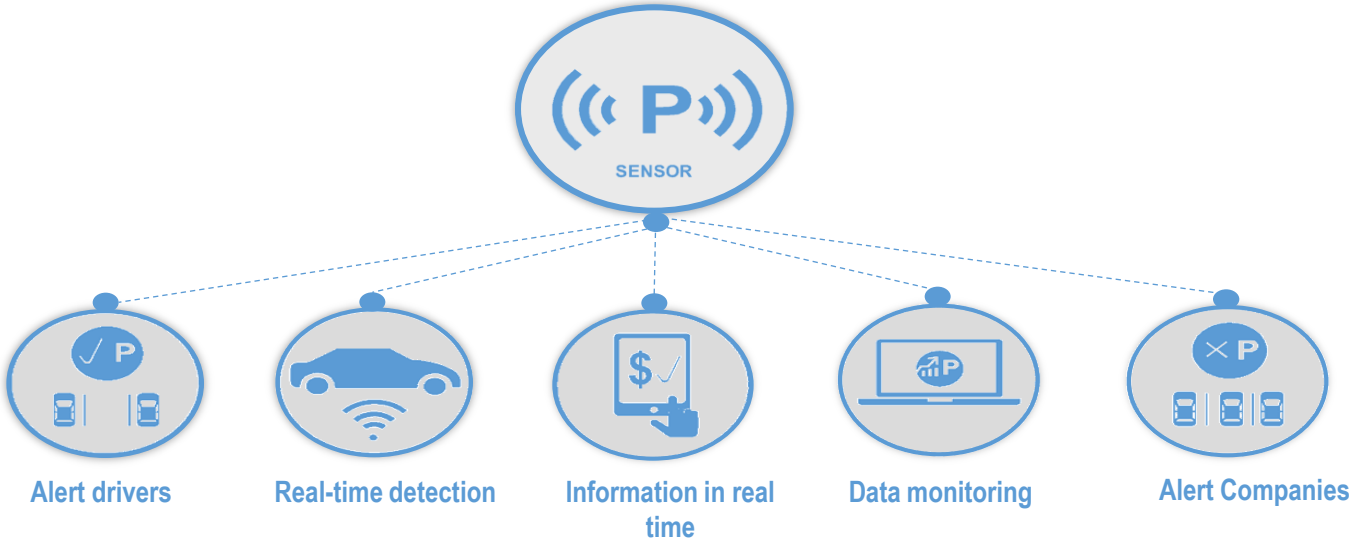
Build more than a network

PARKING LOT PRESENTATION

| ABOUT THE PROJECT

The high vehicle traffic density, especially in the city centre, make driving difficult. All this mostly affects the everyday search for a parking space and thus costs time, hard cash and results in frayed nerves. With **PARKING LOT**, Globaltronic is developing a solution that simplifies parking altogether - right from searching for parking space up to parking .

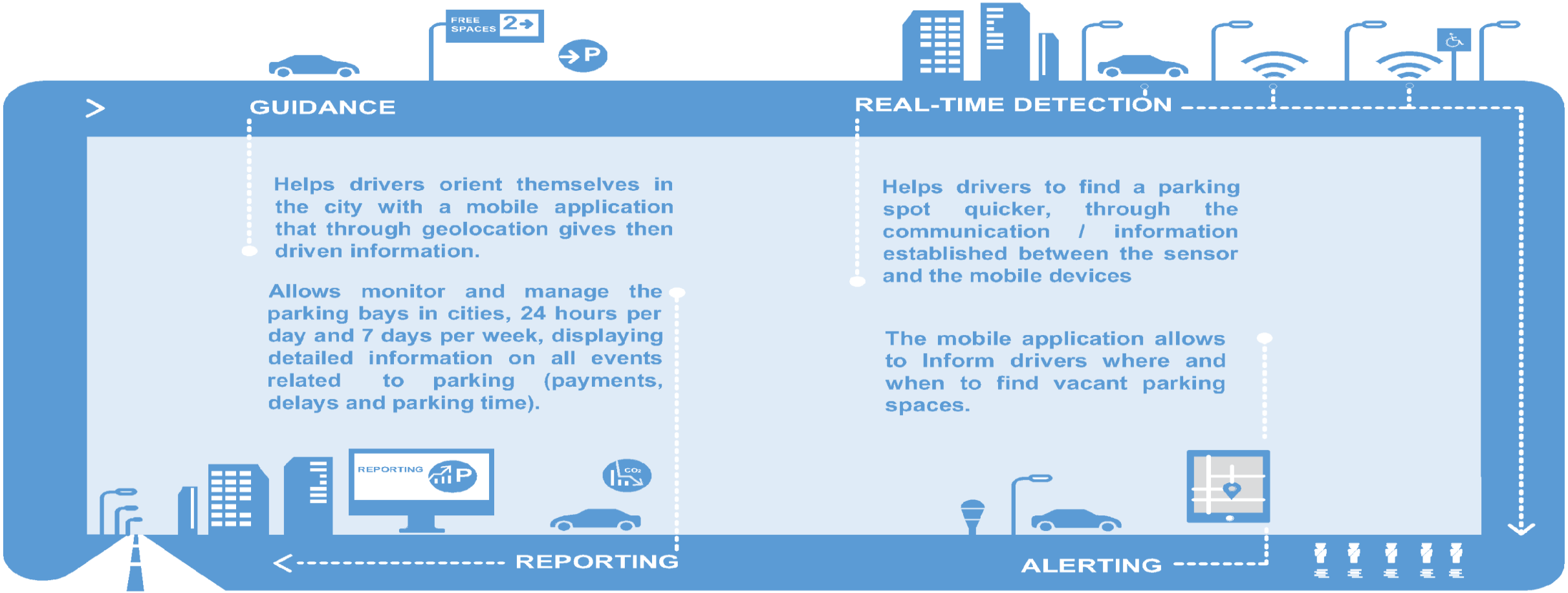
HOW? Introduction of a presence sensor in each spot that allows:



SERNIS Globaltronic spreading technology altice labs

CHARACTERIZATION PARKING LOT

The goal is make mobility, on the whole, smarter and thus also cleaner, more comfortable and cheaper



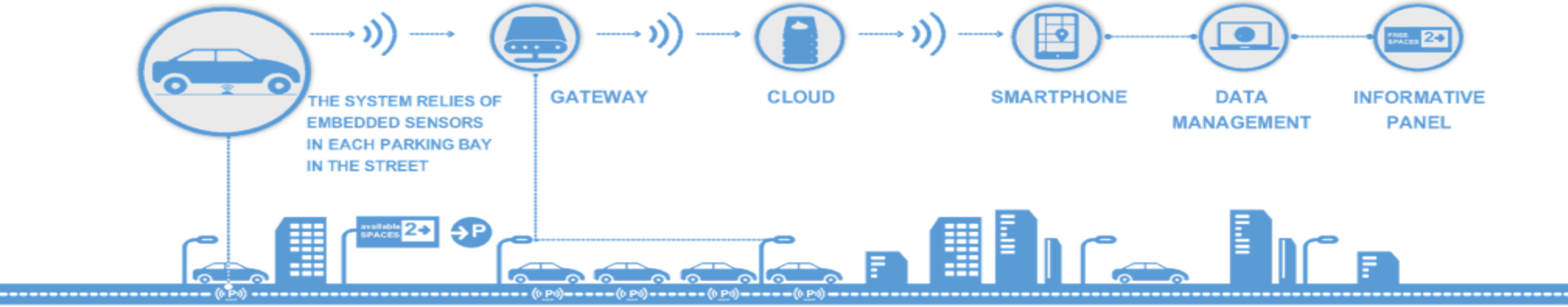
SERNIS Globaltronic spreading technology altices labs

CHARACTERIZATION PARKING LOT

| HOW IT WORKS?

From the sensor to the smartphone

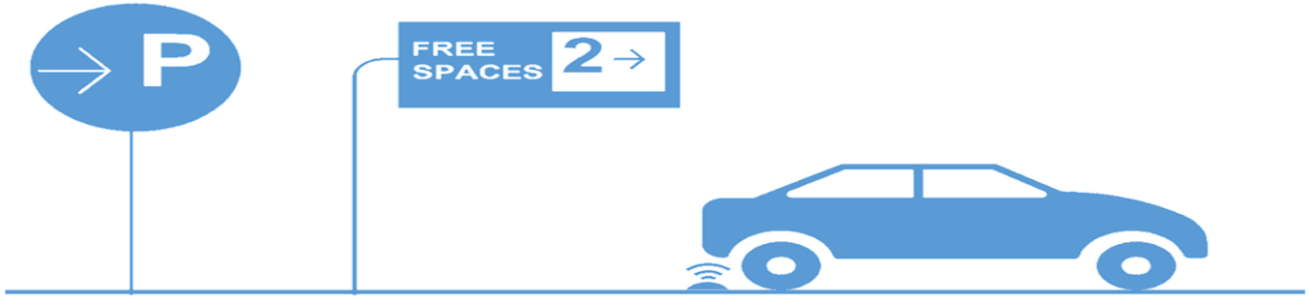
The **parking lot** sensors are installed by **GLOBALTRONIC** at the parking areas. They reliably detect the occupancy status and report it to the **data centre (cloud)** through the nearest **gateway**. All the data sent is then collected and analysed at the data centre. Concurrently, a matching is done with the stored meta-information, of the number of free / busy places. From all this information, the data centre generates a city parking map in real time. Drivers receive all the information through their smartphone app and thus permanently get an overview of the nearest available parking space, with all the related details.



CHARACTERIZATION PARKING LOT

| THE SENSOR

The Parking Lot Sensor which collects the park occupancy information comprises a sensor that detects the variation of a magnetic field and a solar panel that recharges the System internal Battery. The Sensor is placed on the parking spot and sends information to the gateway of the local occupancy status. The exchange of information between the gateway and our sensor board is done by **RF** (Radio frequency) using the ELM TREE Protocol (Enhanced Lightweight Multi-hop Tree Protocol).



At the parking lots entries, panels display information about:

The detection of a parking spot occupancy status is made through the wireless sensor module, which senses the presence of a parked vehicle.

The light sign of a parking spot is visible since the beginning of the hall.

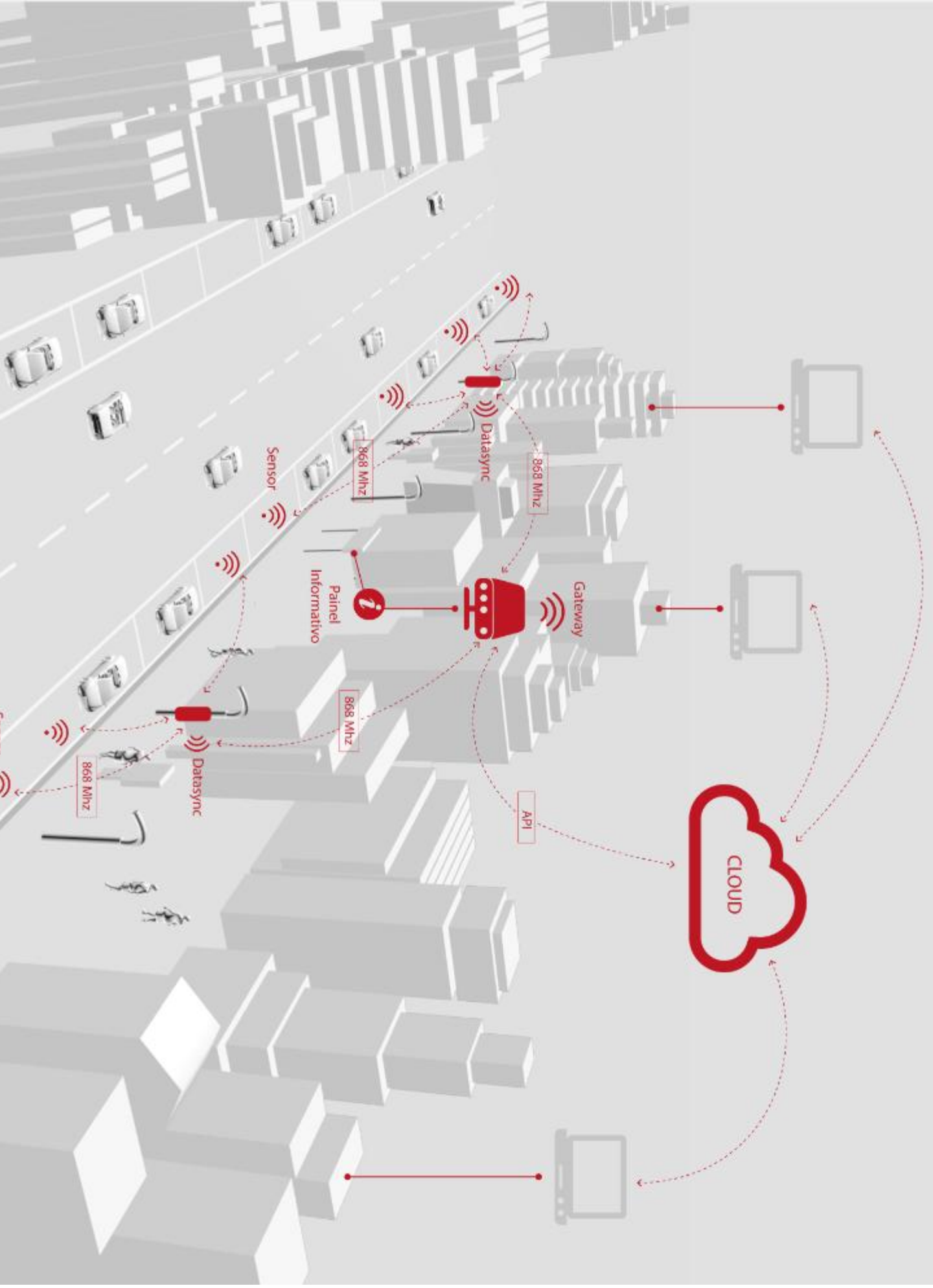
--**Green Light** (free spot)

--**Red Light** (occupied spot)

--**Blue Light** (free spot available for a disabled person)

--**Amber Light** (free spot, available for the Elderly | Pregnant | Families)

SERNIS Globaltronic spreading technology altices labs



20.21.22.23 MAR

2018 Intertraffic

AMSTERDAM

A different approach

The cameras are used to monitor the occupation of parking lots and parking bags.

A different approach

We are working on the algorithm that already identifies all cars with blue color, green trees and vegetation, road to pink and yellow signals. The identification is quite accurate, and the colors are always associated with the correct objects.

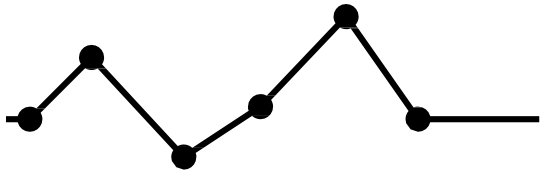
COMMUNICATION

Homepage | renewed

Social Networks | Facebook & Linkedin

Newsletter & Mailing List

Members



Public

1500 Subscribers

WWW.LIGHTING-LIVING-LAB.PT

LIGHTING LIVING LAB

Open innovation in Lighting

CISMOB
Interreg Europe

European Union
European Regional
Development Fund