

Schröder
Experts in lightability™

Lighting and **protecting** the community

SHUFFLE





Putting the **world** to **light**

Schröder is the global identity of over 35 intensely local companies. For more than a century, we are **experts in 'lightability™'**. We embrace the power of light to bring change that goes far beyond lighting. We connect people, make spaces more secure and pave the way to the future.

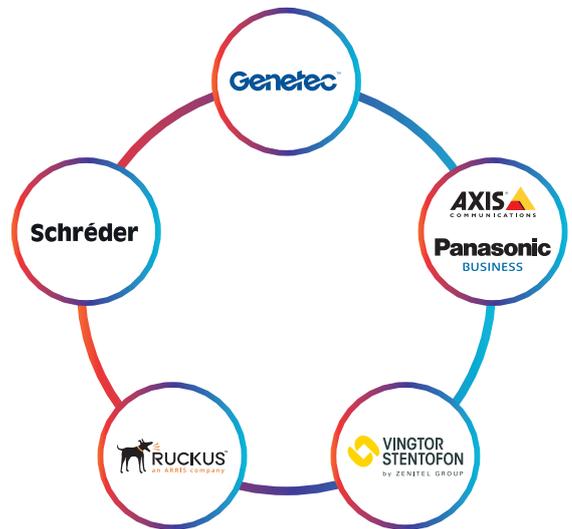
With our partners, we create **practical, sustainable and beautiful solutions** tailored to locations as diverse as Rome's Coliseum, Brussels' Grand Place or the Channel Tunnel. Our latest innovation is to use street

lighting to **support security** in smart cities, public spaces and commercial venues, to make sure that people can **enjoy the area in complete safety**.

2,600 employees worldwide share our passion to light up and make our world a safe place to be.

Synergies for secure places

Schröder has joined forces with **industry experts** to create a fully integrated solution that offers both lighting and security for cities, transport hubs, shopping centres, university campuses, industrial estates and tourist attractions.



A win-win solution

Society is becoming increasingly complex and the challenges linked to security are intensifying. City planners and site developers must take **security measures** and install equipment that generates a feeling of safety and that ensures emergency interventions can take place in a swift and efficient manner.

To avoid multiple poles and mounted devices, Schröder teamed up with the leading experts in surveillance cameras, video software, intercom services and Wi-Fi to provide an **integrated solution**. This system combines a range of energy efficient outdoor lighting modules with state-of-the-art security equipment and software.

Shuffle, a **stepping stone** to smart cities and venues





Schröder launched the unique modular **Shuffle lighting-based system** in 2015. It is much more than a lighting column. It can integrate control systems, loudspeakers, surveillance cameras, emergency buttons, electrical vehicle chargers, sensors, signage lights, Wi-Fi hotspots and mobile broadband.

Schröder is the perfect **partner for smart spaces**. Our lighting solutions are present in the heart of many cities, campuses, commercial and tourist areas. Light poles are widely available and are ideally placed to deliver security solutions. In addition, this modular system is **versatile and FutureProof**. It can be easily adapted to integrate new modules and product evolutions in the future.

The **height** of the Shuffle is optimal for providing light and a number of other services. Cameras at this height give a good **bird's eye view** of the environment. Illuminated signage indicators (e.g. available car park spaces) are easily visible above the crowds and traffic. The light poles can also deliver a **new layer of connectivity** in a specific area (e.g. through Wi-Fi or 4G).

Adding modules that enhance security to a Shuffle column is a **clever and cost-efficient solution**. It gives security operators access to pre-approved sites, to the available power supply and to regularly maintained infrastructure by the city or site owner. An **emergency button and intercom** can be easily integrated to help people in distress while flashing light rings can guide emergency services to the right place. **CCTV cameras** can keep an eye on what is happening and **loudspeakers** can be used to broadcast music and announcements when needed.

Shuffle, a short history of **great achievements**



Even though the **Shuffle** was only launched in 2015, many enthusiastic customers who set out to shed extra light on their vibrant urban living spaces have installed it. And they went **beyond simple outdoor lighting**. They seamlessly integrated other services in the same refined column, such as WiFi, surveillance cameras, loudspeakers and emergency buttons. Just a year after its launch, the Shuffle was awarded ` **Product of the Year 2016** ' by the Highway Electrical Association (HEA) in the UK. A year later, in 2017, the Shuffle received the ` **Smart City Award** ' in London for its technology with great potential for smart cities. Since then, the Shuffle has been installed in **more than 15 countries** worldwide.

2018

Schröder launches **Shuffle Site** at Mobile World Congress

2017

Smart City Award / London

2016

Product of the Year

2015

Schröder launches **Shuffle**

References



Belgium: Liège, Brussels, Andenne, Brugelette, Chaudfontaine, Namur, Bruges | **Germany:** Nürnberg-Worzeldorf, Darmstadt, Ottersweier, Tuttlingen, Stuttgart, Cham, Trier, Wolnzach, Heilbronn, Bad Pyrmont, Ditzingen, Heilbronn | **France:** Toulouse, Valence, Druelle, Luzech | **Switzerland:** Crans-Montana, Nedaz | **Austria:** Linz | **Netherlands:** Maasbracht, Rhenen | **Italy:** Lucca, Biella | **Hungary:** Budapest | **Portugal:** Lisbon | **Spain:** San Sebastian de los Reyes | **Serbia:** Valjevo | **United Kingdom:** Milton Keynes, Blackburn, Crawley | **Chile:** Puerto Saavedra | **Peru:** Lima | **Canada:** Blainville, Gatineau, Laval | **United Arab Emirates:** Dubai



Shuffles
are always
present in
areas where
security is
challenging.



Dons Stadium, Milton Keynes



Schröder installed the **first Wi-Fi streetlights** in the United Kingdom.

This 30,500 seat stadium opened its doors in 2007. In 2016, the developers decided to replace the existing street lighting near the MK Dons Box Office & Superstore with smart interactive Shuffle columns. They combine energy-efficient 360° light modules (20 LEDs), surveillance cameras aimed at the entrance, Wi-Fi and loudspeakers for announcements during match days. The CCTV system and PA speaker are both connected to the control room to allow instant access and remote control.



Duna Arena, Budapest



Shuffle wows athletes and visitors with this **first smart city area**.



In the build-up to the 2017 World Aquatics Championships, the city of Budapest redeveloped the area around the newly built Duna Arena. They choose the Shuffle to create a connected space for residents and visitors. Besides ecological lighting, some columns are equipped with cameras to enhance security while others provide free Wi-Fi. The city planners are looking into other smart solutions such as loudspeakers, electric car chargers and sensors, which can be added easily.

Saint-Pierre Square, Toulouse

The Shuffle helped transform Saint-Pierre Square into **a vibrant connected environment**.



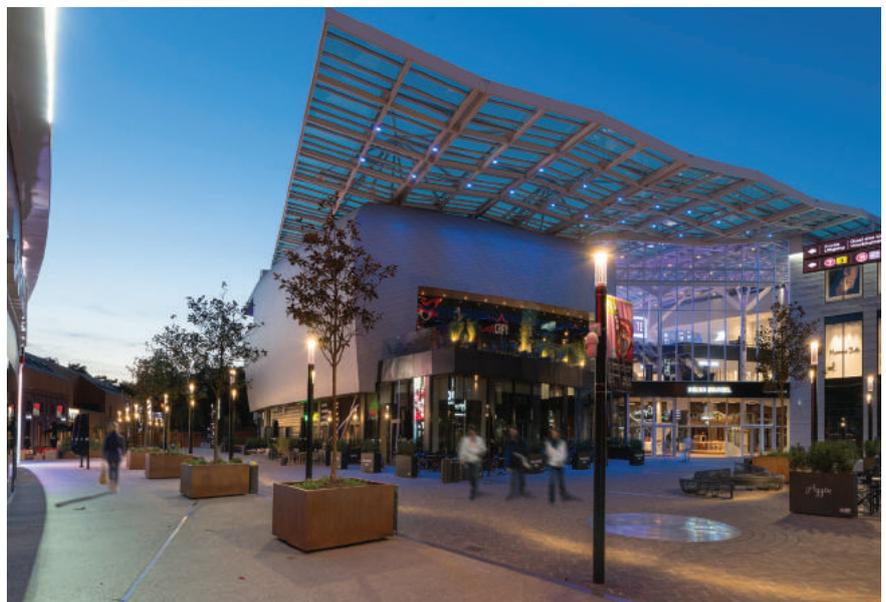
Stylish Shuffle columns were installed to bathe this urban esplanade along the Garonne river in a warm welcoming ambiance. Some Shuffle poles were fitted with security cameras to give citizens a sense of safety, whereas others were equipped with Wi-Fi. This was very much appreciated by the numerous students who gather on the square before diving into the night. The residents love this new clutter-free open area.

Docks Bruxsel, Brussels

Much more than a shopping centre, a dynamic space for **collective experiences**.



Docks Bruxsel guarantees an exceptional urban experience in the heart of an old industrial area of Brussels. It needs to come alive at night, especially in winter when the days are much shorter. Lighting plays a critical role in creating a safe and vibrant environment at night. The architect chose Shuffle as the “perfect modular column that ensures safety and provides facilities and services like Wi-Fi and sound, in an almost invisible way.”



Historic opportunities to **match intense** **security** challenges





Feeling secure is a basic human right. Your residents and visitors want to feel safe at all times. Shuffle delivers a strategic breakthrough to address these challenges with advanced lighting and security features.

Shuffle creates unique opportunities to improve lighting and safety at the same time, without duplicating costs!

Energy-efficient LED lighting offers up to 85% energy and cost savings that can free financial resources to invest in innovative features and services. Converting to LED technology also means opening up smart lighting schemes. It offers a window of opportunity to implement innovative technologies based the same infrastructure.

Shuffle is all about maximising the investment in new technologies to meet multiple challenges at the same time.

Improved lighting
and safety without
duplicating costs!

Focus on integrated security features

Shuffle columns are ideal tools to improve the security of different areas. With the **intercom**, you can offer visitors extra support or a direct link with security personnel in case of problems. State-of-the-art **surveillance cameras** keep an eye on critical areas. They have a deterring effect on people with bad intentions and at the same time provide a heightened sense of security. Last but not least, a **light ring** can send warning signals or guide emergency services to the place of intervention.



Intercom SOS

Unparalleled audio quality with optional video

- Vandal resistant SIP and IP intercom
- Optional HD video at up to 25 FPS (960p) and H.264 for integration with most video solutions
- Crystal clear audio
- Background active noise cancellation
- Automatic volume adjustment
- Stainless steel front plate with one button

Camera



For surveillance with great detail

- Full HD network camera
- Image optimisation (back-light, contrasts, night vision, high luminosity)
- Privacy layers
- ONVIF communication standard
- Event triggering: motion detection, video analytics, tampering...
- 2 versions: Integrated IP camera or external 360° motorized camera on a bracket suited to a wide range of Pan-Tilt-Zoom IP cameras of the brand AXIS



Panasonic
BUSINESS

AXIS
COMMUNICATIONS

Light ring



For warning signals and guidance

- Discreet ring that can light up in any red, green, blue or white combination.
- Permanent light or flashing light to attract attention.
- Can be automated or controlled from a distance.



Wi-Fi



Professional and secure wireless network to support security

- Available in a 360° lighting module or in a dedicated module
- 2 versions: mesh network or wired network
- Dividable bandwidth: e.g. to assign a dedicated part to city operators or security managers and a restricted bandwidth for the general public





A wide array of **benefits**

For the end-user...

- > **Services for citizens**
Improved security and services, such as traffic monitoring, intrusion alerts, crowd management, emergency interventions,...
- > **Smart functions**
The multi-functional column supports smart objectives (e.g. 4G/5G, IoT).
- > **Urban aesthetics**
One integrated column reduces street clutter.
- > **OPEX savings**
The LED lighting solutions are energy efficient and sustainable.
- > **Investment synergies**
The shared infrastructure reduces installation costs.

...but also for integrators

- > **Innovative concept**
Lead the way with new state-of-the-art systems.
- > **Interconnected solutions**
One integrated platform for lighting, CCTV, intercom, Wi-Fi and more.
- > **Modular design**
Many possibilities for customisation according to needs.
- > **FutureProof**
The modular system can be expanded and upgraded in the future.
- > **Aesthetics**
Offer multiple technologies in one eye-pleasing column.
- > **Easy installation**
Pre-cabled modules and quick connectors make your technician's life easy.
- > **Technical support**
From the market leader in outdoor lighting (e.g. photometrical studies, commissioning,...)

Adapted to **your needs**

No matter what outdoor space you manage, Shuffle keeps its promises with modules tailored to your needs.



Cities

- Video surveillance
- Wi-Fi backhaul / public Wi-Fi
- Public address / Music
- Number plate recognition
- SOS intercom
- Lighting control
- Light ring signalling
- Video management software



Public transport

- Video surveillance
- Wi-Fi backhaul / Public Wi-Fi
- Public address / Music
- SOS intercom
- Lighting control
- Light ring signalling
- Video management software



Retail

- Video surveillance
- Wi-Fi backhaul / Public Wi-Fi
- Public address / Music
- Access intercom
- Number plate recognition
- Lighting control
- Light ring signalling
- Video management software

Advanced camera analytics

Video surveillance is good. Knowing what is happening is better. Genetec video management software automatically analyses the footage captured by your cameras. The software keeps an eye on traffic, people and parking spaces. It notifies you on special occasions (e.g. intrusion, overcrowding) and provides you with detailed analytics to fine-tune your organisation. Distracted guards staring at 10 screens simultaneously will be a feature of the past, that you will only see in films.

In association with

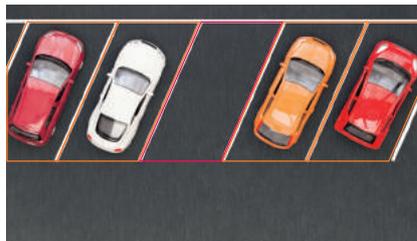


Traffic analyzer



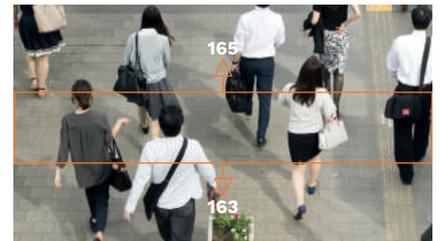
- Automatic counting of vehicles (passenger cars, trucks, motorbikes)
- Classification into two wheel, car and bus/truck
- Up to four lanes
- Output in minutes, hours, days, weeks and months

Parking space analyser



- Empty space detection
- Penalty detection tracking/billing
- Free space traffic guiding
- Parking space information display
- Parking Staff Bodycam

People counting



- Automated counting of people in real-time
- Directional, multiple directions
- Counting of several people simultaneously
- Detailed evaluation through reports
- 3D sensors for maximum precision

Intrusion detection



- Automated perimeter protection
- Operable with thermal and infrared cameras
- Robust in all weather conditions (rain, snow, ...)
- Filtering of animals
- Freely definable areas

Direction controller



- Fail-safe
- Reliable analysis
- Simple configuration

Crowd density



- Alarm if a defined queue length is reached
- Crowd analysis & crowd density estimation
- Analysing the speed of the flow
- Estimation of the average waiting time

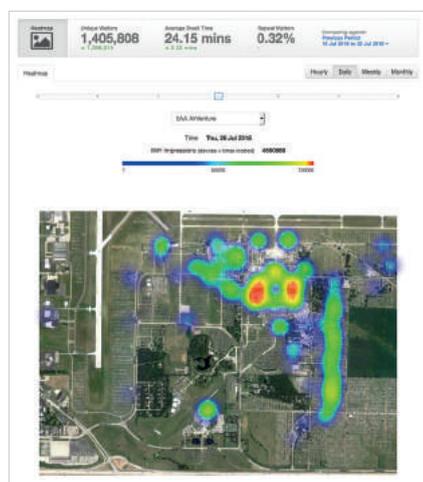
Wi-Fi location and analytics

Wi-Fi hotspots generate a wealth of anonymous information about your visitors. Ruckus allows you to determine where your users are at which moments of the day. How long do they stay and how many of them are regular visitors? This is valuable information to plan your services more accurately.



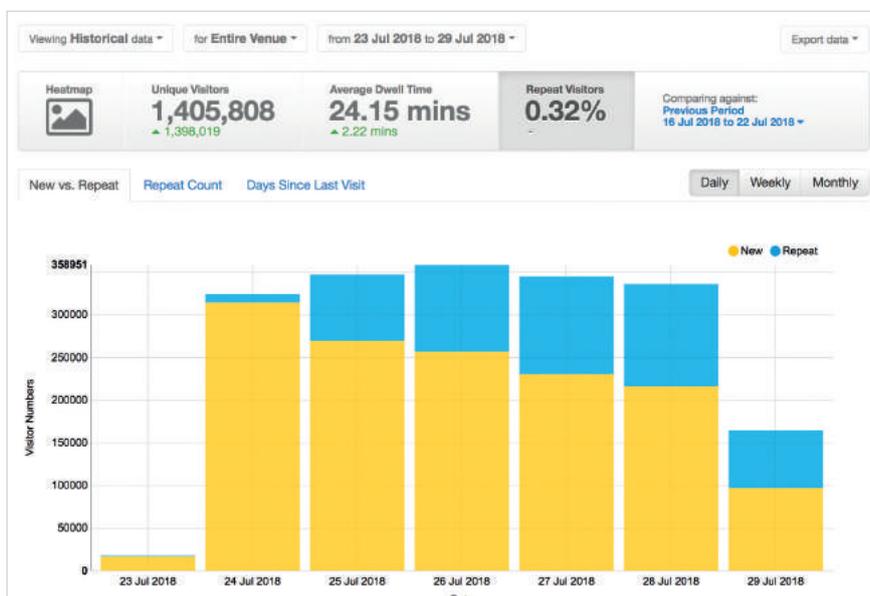
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Heat map



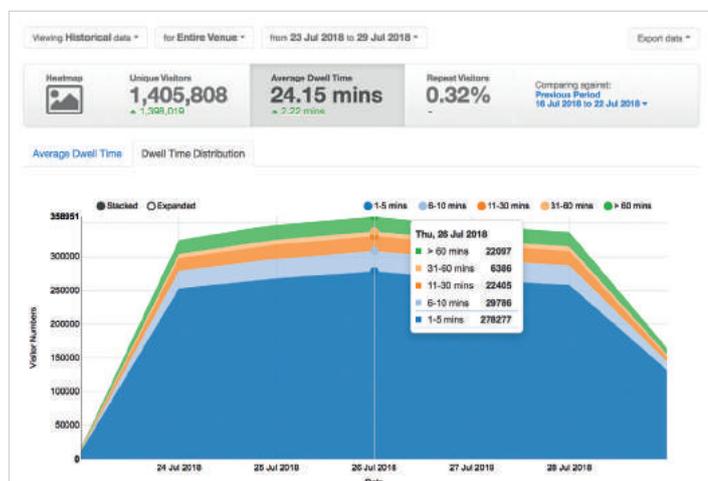
- How many visitors?
- Which is the busiest day?
- Which is the busiest time of day?

Footfall



- How many new/returning visitors?
- How many days since the last visit?

Dwell time



- How many visitors dwell?
- For how long?

Shuffle is **more than lighting** and **security**



Shuffle connects people to their environment

More efficient. Smarter.
Interactive. Connected.

Versatile and upgradable multi-functional light columns for urban living spaces

Lighting



360° LensoFlex®2



Spot



180° LensoFlex®2



Light ring



180° reflector



Luminaire bracket

Beyond lighting



CCTV



Loudspeaker



WLAN



EV Charger



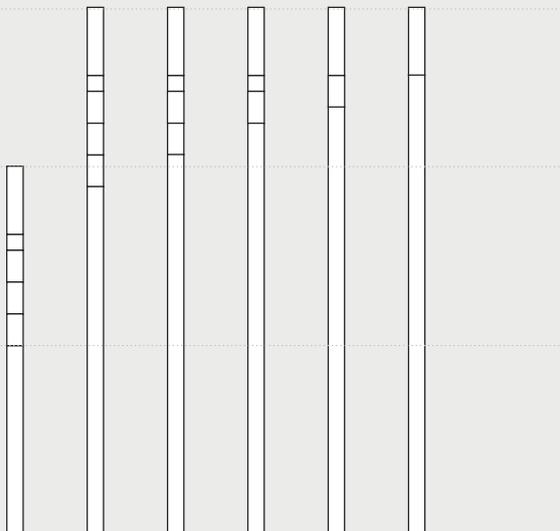
Intercom



6.84M / 22.5'
MAX. 5 modules

4M / 13'

2.28M / 6.5'
Min. pole height



Some concrete cases

CASE 1

A person feels insecure in public space



How can a Smart City respond to an incident on the street?

1. A bystander sees an incident and presses the panic button.
2. The call centre responds to the bystander. The incident location is displayed on the map.
3. Smart cameras automatically rotate 360° to check the surrounding area for criminal activity. Another camera is directed at the victim.
4. Connected lights snap on to fully light the whole area.
5. An alert is sent to emergency services with all the relevant information and a real-time video feed so they can respond appropriately.
6. Emergency services address the public through the loudspeakers "Please leave the area and go indoors".
7. The blue light ring flashes to guide emergency services to the exact location of the incident.

The possibilities are endless, but these cases provide some scenarios to make your city or site a safer place to be. Whether it is intrusion control, smart parking or emergency interventions, a smart combination of Shuffle modules will take care of it. Or use the modular columns to analyse how your spaces are used, to adapt your services and interventions accordingly.

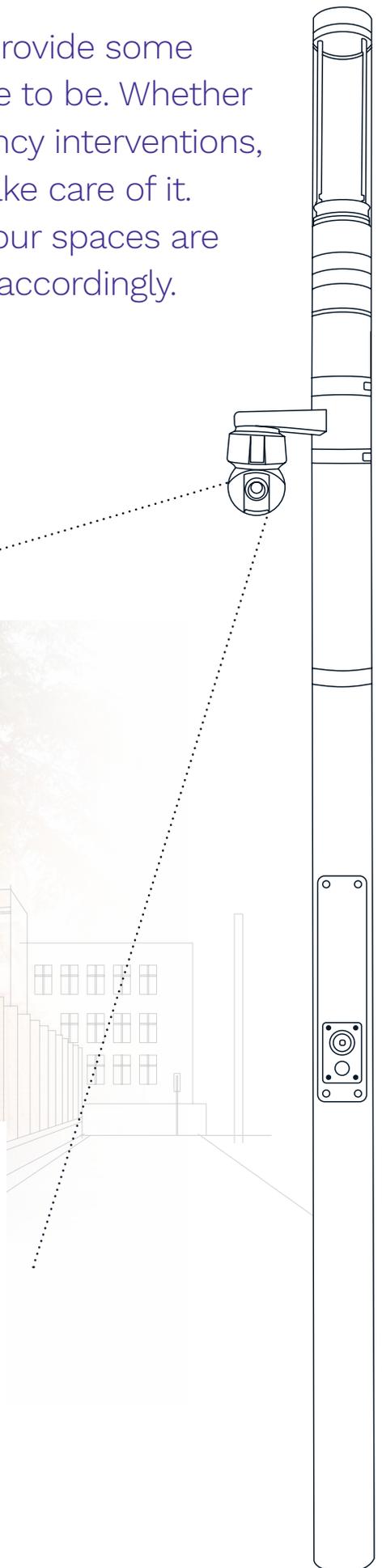
CASE 2

Protection against intruders



How can a University respond to someone trying to break into a campus building at night?

1. Cameras identify movement at a place and time when no-one should be there.
2. Connected lights snap on to fully light the area.
3. The light ring on the column starts flashing.
4. Smart surveillance cameras automatically turn to capture video.
5. The intruder receives an automatic warning “you have been detected, please leave this protected area”.
6. An alert is sent to the police with all the relevant information and a real-time video feed so they can respond appropriately.





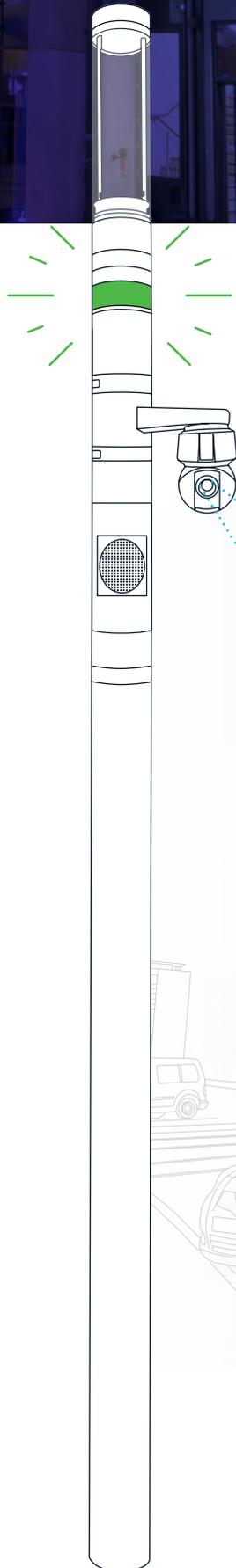
CASE 3

Understand how spaces are used



How can Planners/Operators/Authorities know how a Park is used and act upon it?

1. Surveillance cameras with analytics provide intelligence, e.g.
 - where most people hang out (crowd analytics),
 - which days and times of the day the park is most used,
 - where rubbish is left behind,
 - which park facilities are most used or underused e.g. sports fields, picnic areas, play grounds, toilets, cafés,...
2. Free Wi-Fi in the park brings people outside. Wi-Fi analytics provide intelligence (mac address counting and tracking) on the areas where most people congregate.
3. A surge of people in one area may highlight the need to:
 - call in cleaning teams,
 - deploy security guards,
 - close the park against overcrowding,
 - re-fill the drinks at the café and in the vending machines.



CASE 4

Smart parking in a commercial area

How could a Shopping Centre facilitate parking?

1. The red/green light rings on the columns signal whether there is an available parking space nearby or not.
2. If the parking time is limited to 2 hours, an alert is sent to the parking operator when cars overstay their time.
3. When cars park in a loading area or in a wrong place, an alert is sent.
4. The system keeps detailed statistics of the number of cars that are parked at different times of the day and week.
5. Number plates are automatically checked to give relevant access to VIPs or staff.



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