

interact



P A S C A L

Group Light Management

Global trends

Technological revolution

Digitalization

Cities want to benefit from the enhanced performance of software-based solutions

- Increased knowledge and new insights through data analytics (“big data”)
- Efficient asset management through process automation and project tracking

Internet of Things and M2M

- Cities want to benefit from the possibility to connect their city assets
- Continuous monitoring and accurate energy metering of every cabinet
- Flexible adaptation of an asset’s behavior from remote

Smart city and smart grid

- Cities want to be able to learn, adapt and innovate with the use of new technologies



Global trends

Environmental changes

Climate change

- Cities want to become sustainable and create a “green” image to attract people

Urbanization

- Cities want to improve living conditions like safety and well-being for their citizens



Global trends

Financial pressure

Decreasing budgets

Cities need to spend their money more efficiently, by:

- Reducing energy consumption and realization of maintenance savings
- Optimizing investments into the city infrastructure

New business models

- Cities want to benefit from specialized service providers by outsourcing city services



Specific trends in lighting management

The market for public lighting management is in a dynamic transition phase, and is fundamentally changing by adopting new technologies.

Environmental changes

Financial pressure

Technological revolutions

Traditional lighting management

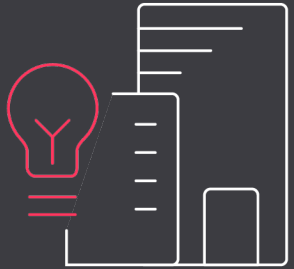
- High CAPEX investments
- Physical failure inspection (e.g. night scouting)
- Paper based mapping and archiving
- Undifferentiated lighting levels
- Metering and billing based on estimations and calculations
- Individual infrastructures
- All expertise in-house
- Customized, complex solutions

Professionalization of lighting management

- New innovative business models
- Remote monitoring with automatic fault notifications
- Software based asset management
- Billing based on accurate remote metering per cabinet
- Leverage infrastructure
- IT support (SLA compliance)
- Intuitive, proven solutions

Specific trends in lighting management

Reliability



Performance

Cities demand stable solutions to ensure constant access to their lighting infrastructure



Security and privacy

Cities want to protect their lighting data against any data leaks and malware infections



Future-ready

Cities need solutions which flexibly scale up to meet any future requirements

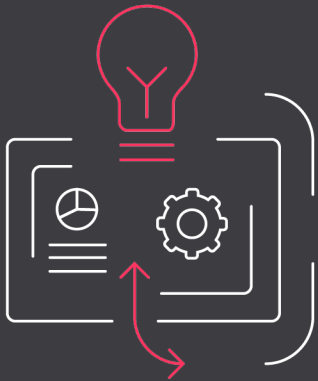


Maturity

Cities need reliable supplier partnerships which secure long-term infrastructure planning

Specific trends in lighting management

Openness



Interoperability

Cities want to connect their lighting management software with existing city systems



No proprietary technology

Cities want to use standardized network technology



No vendor lock-in

Cities want the choice to install luminaires from different providers

Specific trends in lighting management

Simplicity



Infrastructure

Cities want seamless, workable solutions free from technical complexity

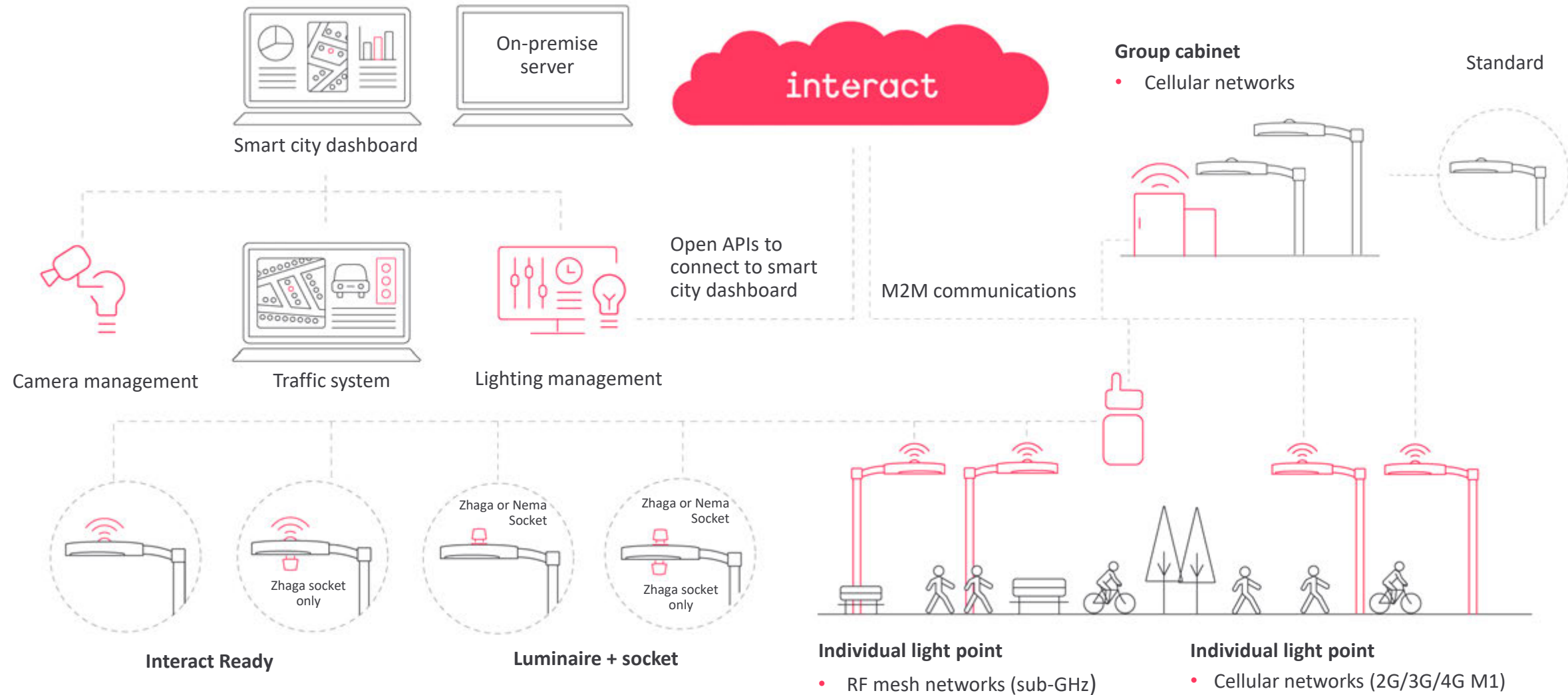


Installation

Cities want flexible plug and play solutions without the need for any additional expert knowledge

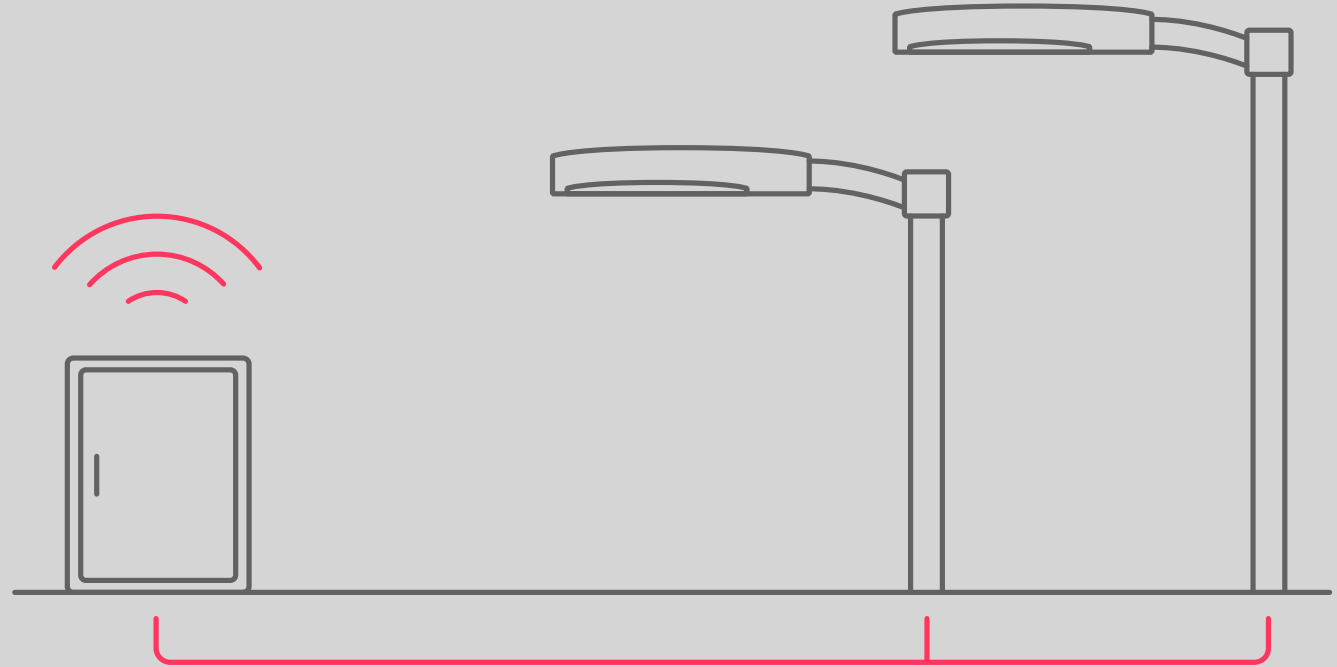
Interact City

System configuration



Cabinet group management

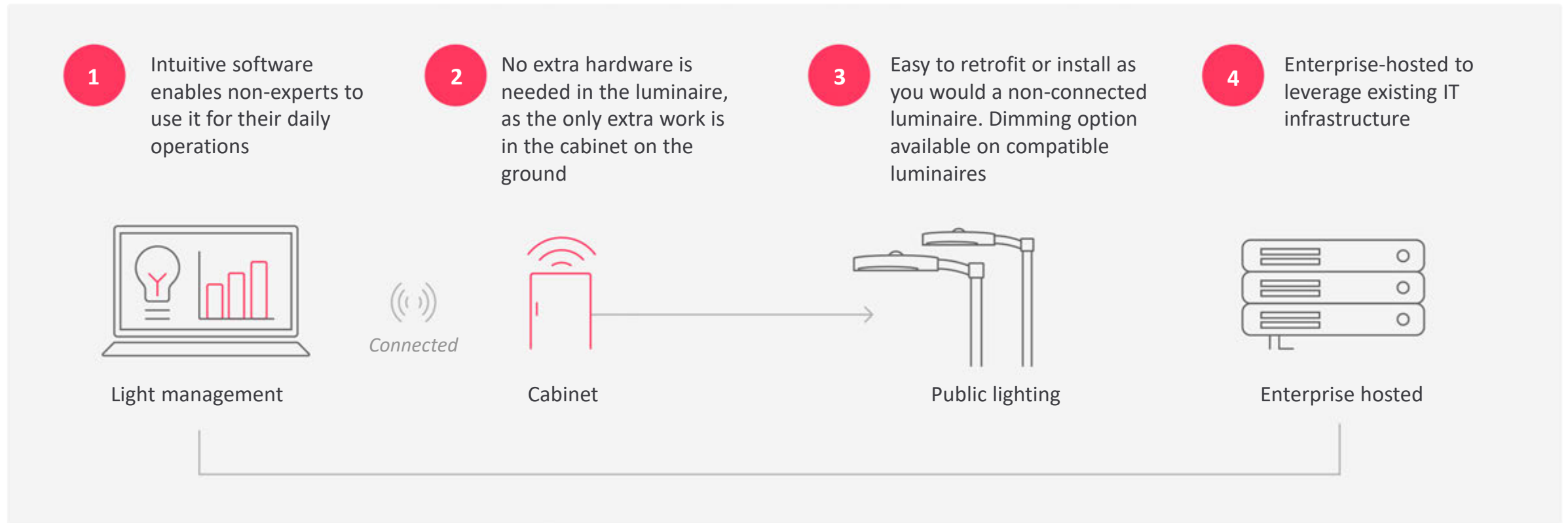
Groups of existing wired streetlights, regardless of manufacturer, can be connected wirelessly via a cabinet to Interact City through an existing mobile network.



Connectivity model: Cabinet based group management

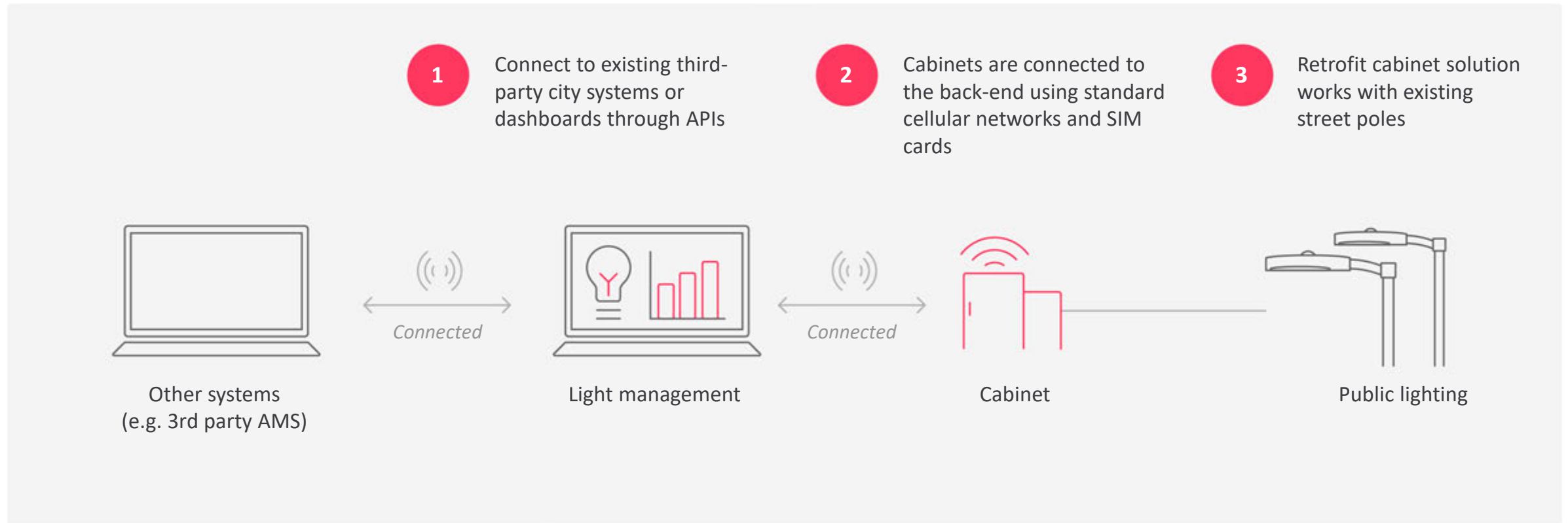
Fully in control

Simple solution: connecting every cabinet directly to the lighting management system puts customers in control of their lighting installation.



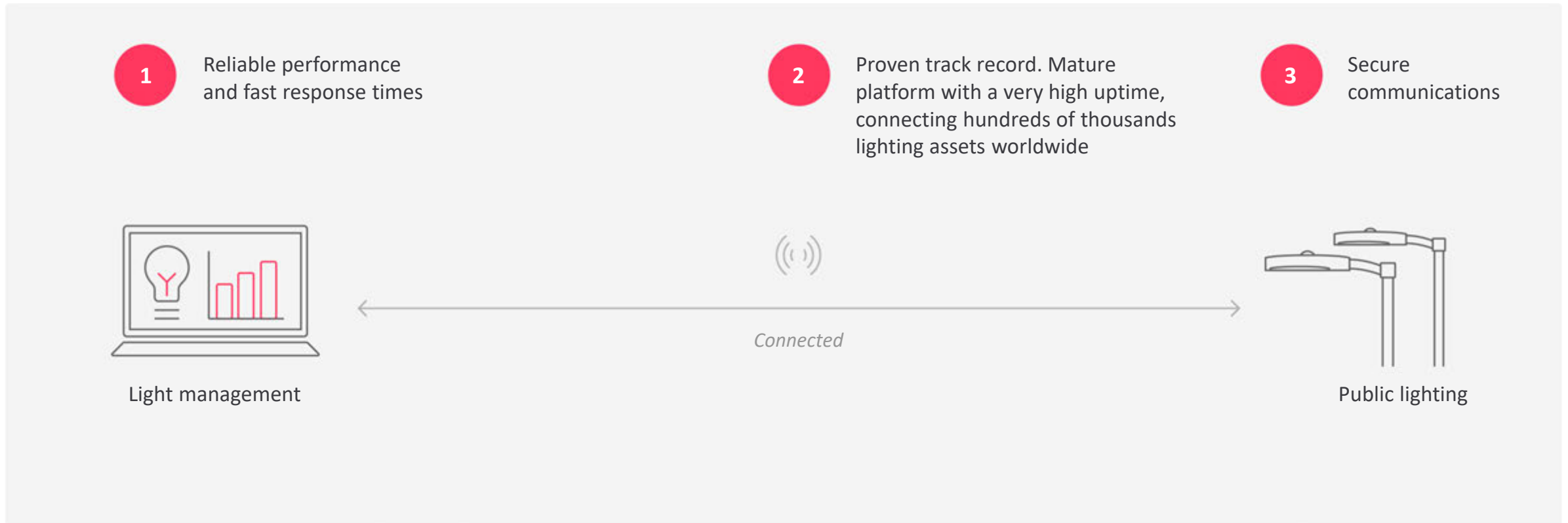
Open solution

Flexibility through a modular solution which can also be retrofitted.



System reliability and security

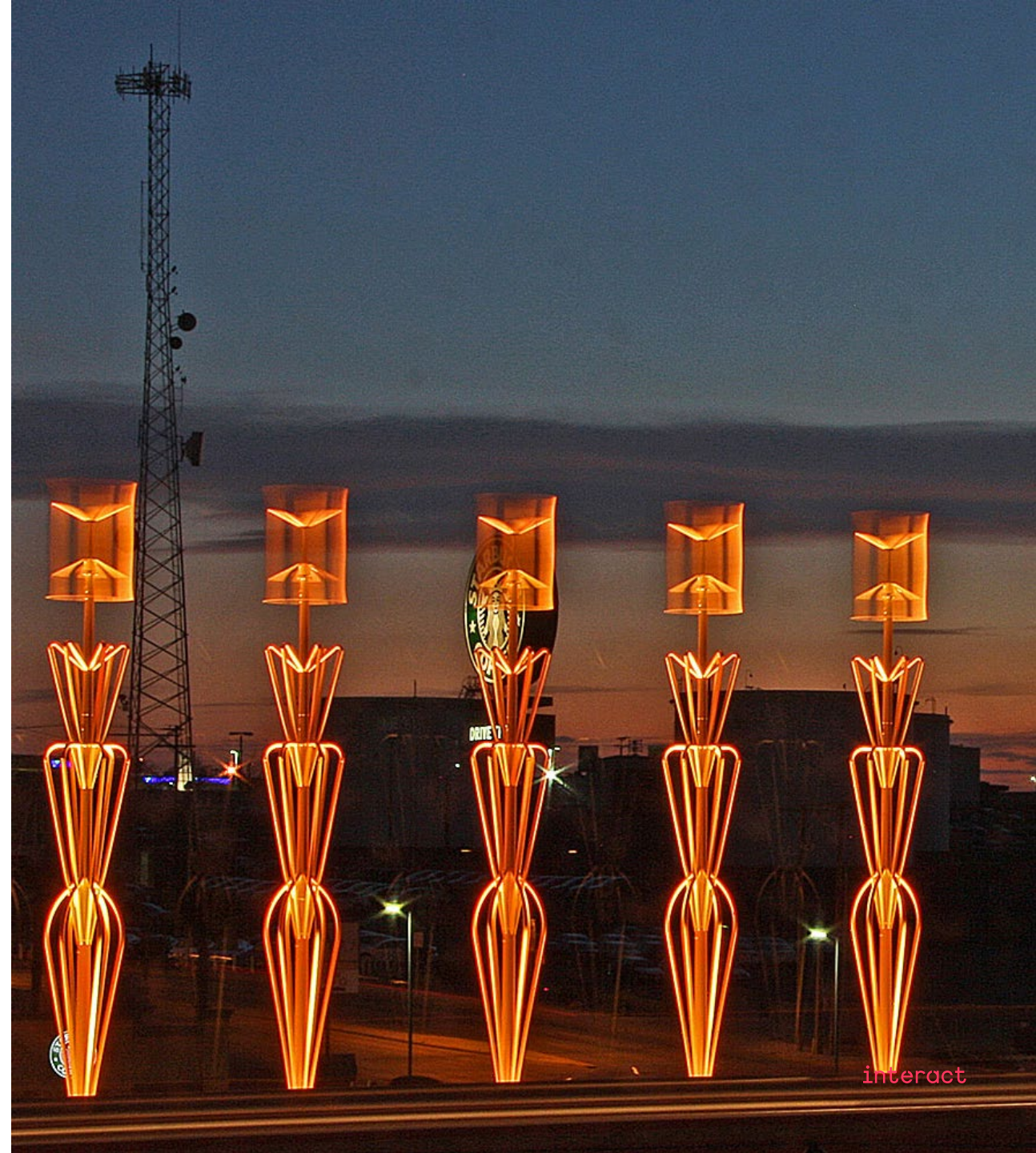
Basic performance criteria often get less attention, even though they play a critical role in daily work life and provide a solid base for longer-term planning.



Manage KPIs while optimizing total cost of ownership

Benefits for operations and maintenance

- Energy saving (up to 40% more than LED only)
- Meet your KPIs via automated failure reporting
- Low CAPEX optimizes your total cost of ownership
- Real-time status feedback to increase maintenance efficiency
- Accurate metering of energy consumption
- Reduced energy cost
- Map-based management of cabinets
- Optimized maintenance planning
- Flexibility to adapt lighting levels
- Accurate reporting of lamp-burning hours
- Easy and fast installation and commissioning



Make your city more attractive and cost-efficient

Benefits for municipalities and road authorities

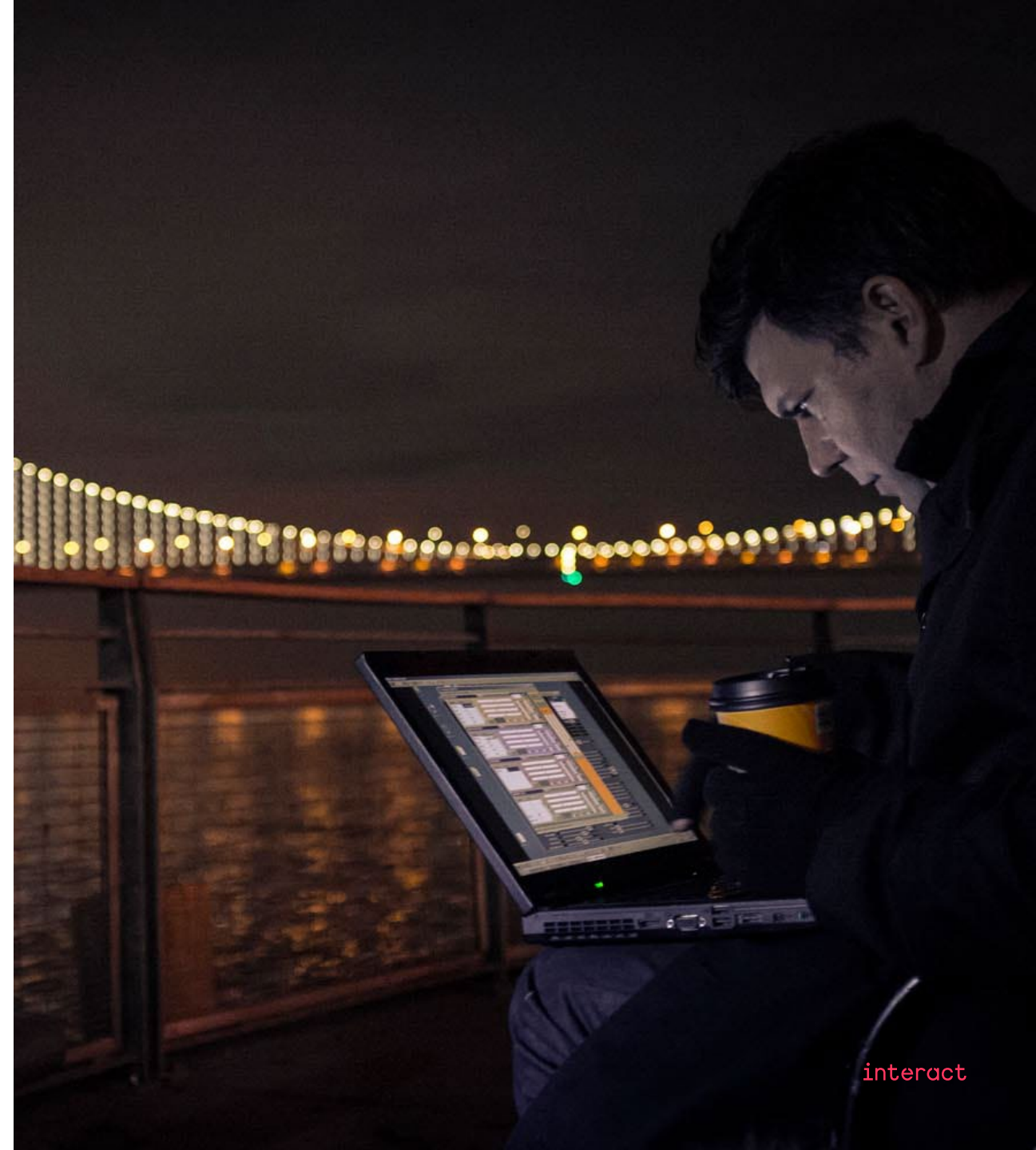
- Increased safety in streets
- Real-time status feedback increasing maintenance efficiency
- Accurate metering of energy consumption
- Green image Reduced energy cost
- Reduced CO₂ footprint
- Reduced light pollution
- Flexibility to adapt lighting levels



Feel the benefit of simple, state-of-the-art software

Benefits for lighting operators

- Automatic reporting of failures
- Ease of use also for non-experts
- Map-based management of cabinets
- High performance and security
- Accurate reporting of lamp-burning hours
- Optimized maintenance planning
- Easy and fast installation and commissioning
- Reduced energy cost
- Optimized inventory based on historical data



Enjoy the safety and livability of a modern city

Benefits for citizens

- Less crime and an increased sense of safety
- Liveable city
- Unique city character
- Event specific lighting during festivals or football matches
- Less light pollution
- Improved traffic safety
- Innovative city image



Features

- Accurate on/off schedule by use of photocell, calendar, Astroclock
- Remote cabinet programming and manual override
- Energy meter reading
- Daily energy reporting
- Well defined user roles and responsibilities
- Alarms (please see next slide)



Alarms

- Battery mode
- Battery shutdown
- Battery not connected
- Missing module
- Missing meter
- Cabinet door open
- Main power failure
- Leakage detection
- Light on alarms
- Light point failure (>5% failed)
- Light switching failed
- Breaker contactor error
- Module not responding
- Configuration dispatch failed
- Overvoltage error per phase
- Under voltage error per phase
- Switch module not working
- Phase current out of range



Benefits

- Reduce energy consumption, accurate light control, schedules and photocells
- Future-proof — expand with individual light point management
- Voltage monitoring and energy meter reading (e.g. modbus)
- Optimized total cost of ownership
- Instant alarms
- Retrofit — reuse of pole, cabling infrastructure



Interact City Group Cabinet

Alarms

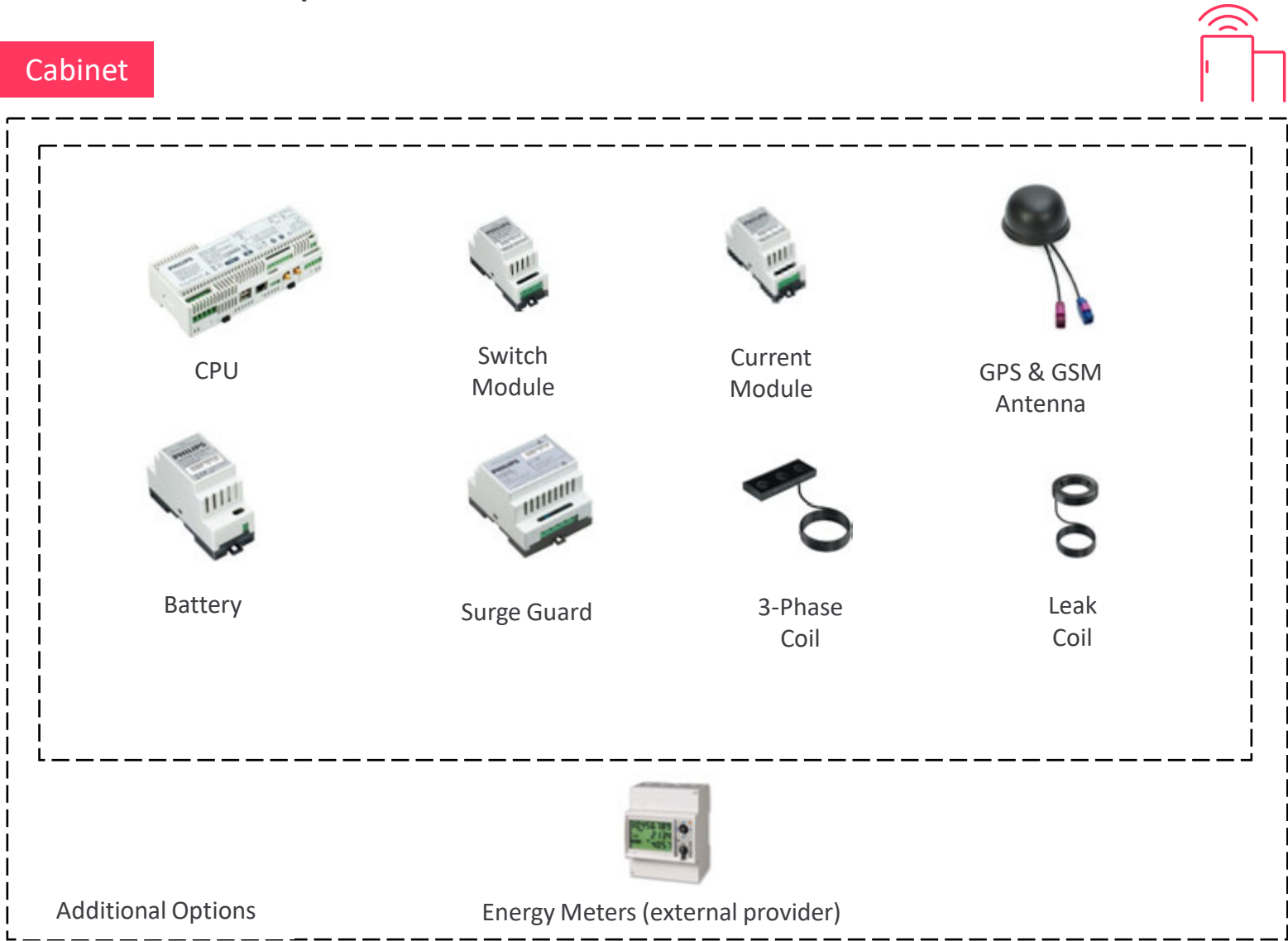
Critical alarms

- Cabinet door open
- Circuit breaker/contactator error – no current
- Light on, manually on or contactor hanging
- Breaker/contactator error – no current on all circuits
- Outgoing phase 'x' current error – above threshold
- Outgoing phase 'x' current error – below threshold
- Under voltage
- Main power failure

Preventive alarms

- Installation mode
- Maintenance mode w/o alarms
- Maintenance mode /w alarms
- Leakage
- Missing meter
- Missing module
- Burn time exceeded
- Lamps failure
- Overvoltage
- Battery not connected, shutdown

Cabinet Group hardware components



04. Case studies

Install base – Group Cabinet Control



Asia

- ORR Hyderabad, India
- NRDA, India
- Pune, India
- Singapore
- Malaysia
- Indonesia
- Bangladesh

Europe

- Madrid, Spain (entire city)
- Denmark. Copenhagen
- Italy
- Poland
- Germany
- Belgium

Middle East

- City of Abu Dhabi
- City of Al Ain
- Oman
- Kingdom of Saudi Arabia

Interact City for PLUS expressway smart streetlight

Peninsula Malaysia

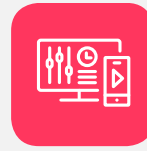
The vision

To achieve the energy saving and assets digitization.

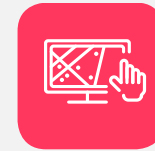
- 1) **Energy and cost saving** - Philips lighting has proposed the most energy efficient lighting solution including intelligent connected system with overall energy and cost saving whilst fully understanding the cost implications and investment required for implementation. This will enable more informed decision making based on the total value of ownership over the lifetime of the proposed system.
- 2) National Smart road light with smart controls systems
- 3) **Enhanced services** to PLUS road users through improved lighting level
- 6) **Enable professional management** of the road lighting in terms of operation & maintenance.

The solution

The Interact City software installation enabled PLUS by replacing inefficient mercury-vapor lamps with smart, high quality, energy-efficient LEDs. It was also able to control and monitor its street lights remotely and generate new insight into the operation and optimization of a key city resource.



Scene
management



Lighting asset
management



Energy
optimization



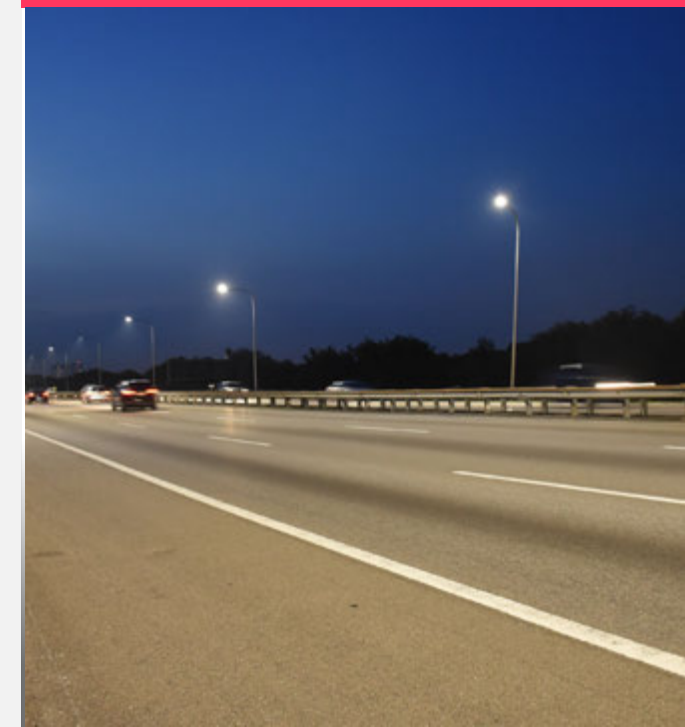
More than 6000 connected
LED street lights



Supports PLUS's Digitize the light
point for road



Enable scene dimming for energy
optimization



SMART cabinets – 310nos : PLUS Malaysia

Project :

PLUS Highway, 310 CityTouch Cabinet with 14600 light points

Location :

North South Highway

Year of Completion :

2019-2020



SMART cabinets - 11nos PLUS Malaysia

Project :

Penang Bridge, CityTouch Cabinet with 286 light points

Location : Penang

Year of Completion : 2019



SMART cabinets – 6nos : PLUS Malaysia

Project :

PLUS Menora & Meru Tunnel,
6 units of CityTouch Cabinet
with 286 light points

Location :

North South Highway

Year of Completion :

July 2019



Connected LED lighting breathes new life into a city

Pune, India

The vision

Pune’s conventional street lighting was outdated, with high maintenance costs and unsustainable energy consumption becoming a burden on the city.

A new road lighting solution was proposed to reduce expense and streamline operations.

The solution

AmpLight is part of Interact City’s connected lighting system and software which is designed to improve energy efficiency, increase citizen safety, and reduce mounting maintenance costs. Over 80,000 halogen lights were replaced with LED luminaires, all of which can be monitored and controlled from a single Command and Control room. To top it all, due to funding generated from both energy and maintenance cost savings, this project was able to be fully self-financed.



Integrate with Pune Smart City dashboard



Increased visibility makes the streets safer for citizens at night



Group monitoring of LEDs led to energy savings of up to 40%



More than 80,000 halogen lights replaced with energy-saving LEDs

“Our vision is for Pune to become a smart city, transforming the lives of residents through the use of technology. We’re not only replacing the streetlights with LEDs, but also controlling them centrally.”

Kunal Kumar, IAS, Commissioner,
Pune Municipal Corporation



A major step towards a smarter city

Guadalajara, Spain

The vision

The city of Guadalajara wanted to implement a sustainable public lighting system that provides citizens and visitors with high-quality light. They wanted something scalable and flexible to meet the city’s future needs, giving them the option to connect sensors and add smart city functionality when necessary.

The solution

Guadalajara installed 13,500 connected LED street lights and 187 cabinets controlled by Interact City software. Lighting asset management software – combined with the use of LEDs – has enabled the city to save 68% on energy consumption and reduce operational costs considerably.



Scene management



Light asset management



Energy optimization



13,500 connected LED light points



First city in the world to manage cabinets and single light points via one interface



68% savings on energy and a CO₂ emission reduction of 4,200 tonnes per year

"This lighting management software helps us to reduce energy consumption, be more efficient, and ultimately helps us provide a better service to our citizens."

Antonio Roman, Mayor of Guadalajara





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