interact

The future of your city

An IoT-ready smart lighting system that improves city services and safety

Find out more about Interact
www.interact-lighting.com/city

Guadalajara, Spain


Cologne, Germany

The new era of the city

Over half of the world's population lives in urban centers[1], and this figure is set to rise.

This presents cities with major challenges globally. Rapid urbanization and population growth are putting more pressure on resources. This is reflected in the environmental impact of cities; despite occupying a mere 2% of the world's landmass, their footprint is staggering. Cities consume over two thirds of the world's energy[2] and account for more than 70% of global CO_2 emissions[3].

Cities must reduce their environmental impact while adapting to the needs of the people who live there. Cities need to become safe living spaces that facilitate high quality of life for citizens.

[1] World Health Organization: https://www.who.int/gho/urban_health/en/
[2] C40 Cities: https://www.c40.org/why_cities
[3] https://new.unhabitat.org/topic/climate-change

Smart cities: the way forward

How can we successfully navigate these challenges? For many decision-makers, the answer is to become a smart city.

In an increasingly digitized world, it's clear that technology will significantly impact how you manage, run, and grow your city. This has spurred a rapid increase in smart city initiatives and interest in the potential for smart cities in recent years.

Smart cities can offer important benefits, including:

- More efficient city planning and operations
- Improved city services
- Increased sense of safety and security
- Significant energy savings and reduced costs
- Enhanced city sustainability potential
- Enabling the community to engage with data from the Internet of Things (IoT)

Albany, New York, USA

Creating a smart city

Making the most of smart city opportunities while navigating technical, legislative and political challenges is a balancing act.

Limited budgets and funding. Resource constraints. Siloed infrastructures. The pressure to solve more immediate problems rather than focusing on longer-term transformative goals. These are just some of the challenges getting in the way of creating a smart city.

But despite these difficulties, city leaders are expected to deliver results. They are often called upon to:

- Continually improve citizen services (e.g. provide inner city parking, reduce traffic, create a healthier environment)
- Enhance the feeling of public safety by reducing crime rates and accidents
- Improve the city infrastructure
- Demonstrate technology leadership (e.g. leveraging technology for more rapid responses to complaints)
- Enhance engagements between citizens and the city
- Save taxpayer dollars, improve operational efficiency and create energy savings
- Access grants and private sector funding via public-private partnerships (PPPs) to attract new talent and business
- Manage the expectations and ambition of key stakeholders

Get more value from something you already own – your lighting

To create a smart city you need a city-wide infrastructure. Fortunately, street lights are found in abundance all over public spaces, meaning they can easily play a role in the success of smart cities.

The right lighting is essential at night for proper visibility and safety. It can have a profound effect on the attractiveness of a city, which in turn impacts tourism. But the role of lighting is evolving far beyond illumination.

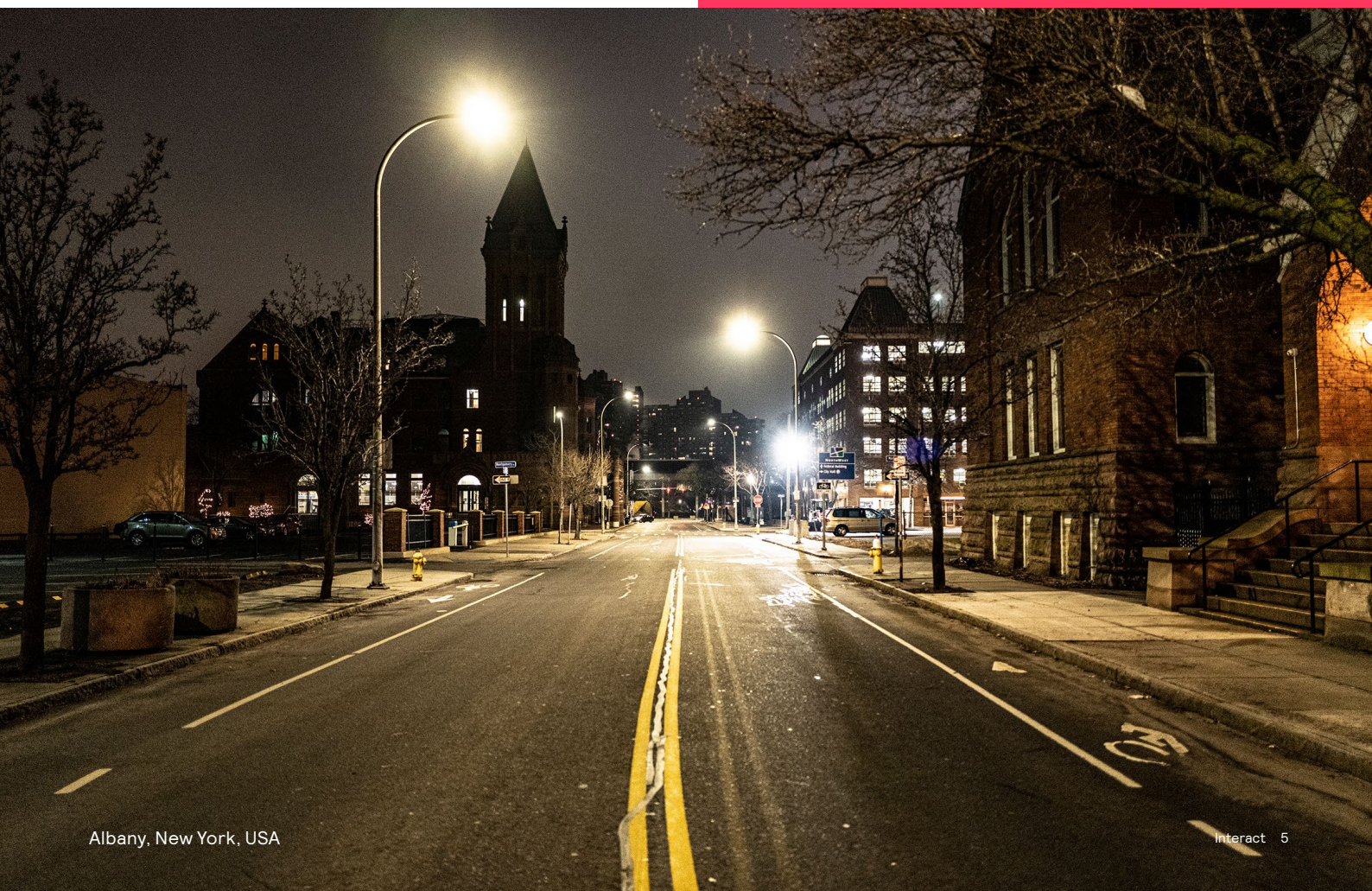
Switching to LED lighting can offer energy savings between 50–70%. And the potential doesn't stop there. By pairing LED with smart controls, cities can realize energy savings of up to 80%.

Connected lighting enables the use of applications that can save energy in numerous ways, like accurate on/off switching, dimming control, light level management and integration with other systems to enable condition-based lighting. It allows cities to fully enjoy the benefits of LED.

Street lighting is everywhere that people need to go. When connected, it can serve as the ideal infrastructure for distributing IoT capabilities across a city, and as an integration point for new applications and services.

> "I wanted to plan for the city of the future. We needed to ensure that we're investing now for generations to come."

Kathy Sheehan
Mayor, Albany, United States



Albany, New York, USA

Welcome to Interact

Interact is a connected LED lighting management system which helps you improve services, enhance safety, beautify public spaces, encourage civic pride and increase energy efficiency. The connected LED lighting system and management software enable you to remotely manage, monitor and control all city lighting, from roads and streets, to sidewalks and crossings, and parks and plazas, all from one single dashboard. Plus, the savings you make can be reinvested into future projects.

Interact is also compatible with your existing lighting infrastructure, allowing you to integrate it with a smart city dashboard and other applications like noise and air quality monitoring, incident detection and more, via open APIs. These APIs make it easy to respond to the challenges of the city, improve liveability and create a more attractive urban environment. Overall, Interact helps you to forge a unique city identity capable of attracting more visitors and investments.

What Interact can do for you

- Control and monitor lighting remotely
- Set appropriate lighting schedules to deliver the right light when and where it's needed
- Override schedules manually in the event of incidents and emergencies
- Identify lighting failures through real-time fault notifications
- Support sensors that collect both lighting and non-lighting related data, which can be used for further analytics and use cases
- Achieve energy savings of up to 80% over conventional lighting
- Visualize lighting assets in one dashboard
- Export lighting data to smart city dashboards

Getty Images

Your smart city building blocks

Interact utilizes powerful software applications which can transform city luminaires into valuable sources of data.

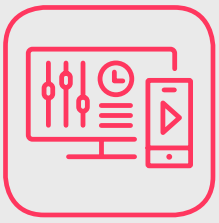
You can then share the data you collect with other city management systems to analyze and gain new insights into your operations.

Lighting asset management

Lighting asset management software gives you full visibility into your lighting infrastructure. Automatic fault detection alerts you to issues for quick response and minimal downtime. Data can be used to make informed decisions and optimize lighting performance. Manage lighting-related workflows from an intuitive application and view data from a centralized dashboard.

Energy optimization

Optimize street lighting performance and accurately measure energy usage in real-time. Full control of your city lighting lets you reduce CO_2 emissions, make progress toward your sustainability goals, and lower energy usage and costs. Those savings can be reinvested into other areas of your city's infrastructure.



Scene management

Remotely adapt city lighting to suit time of night, season, or event. Turn lighting up if there's a traffic incident or a crime. Dim to 30% when the streets are empty late at night. Use sensors on the light poles to detect activity, keeping your citizens safe and comfortable – easily turning parks and plazas into livable spaces.

Sensors

Turn every street light luminaire into a city sentinel. Outdoor sensors which detect motion/presence, street light tilt angle and strong impacts, ambient temperature, noise and others, can be attached to a street light luminaire fitted with the ZHAGA Book 18 push-and-twist lock socket interface in line with the ZD4i standard for openness and interoperability. The sensing functions can be remotely configured and data sent to the Interact application via the connected lighting network.*

* Check sensor availability with you local Signify representative.

Clean energy with hybrid* and solar street lighting

Globally, 1.2 billion people do not enjoy the benefits of electric lighting while they live in areas with abundant sunlight. This is where solar lighting can be utilized to improve their living spaces.

In Europe, more than 75% of greenhouse gas emissions come from energy production and use. Decarbonizing the energy system can help to reach its climate objectives.

- Solar and hybrid street lighting minimize emissions and scale up the use of renewables
- Hybrid-solar technology uses clean solar-powered electricity when there is sunlight and will switch to the mains grid when required
- 15 solar streetlights save enough electricity to power an electric car or a household for one year

Infrastructure projects — such as connected street lighting retrofits — create, on average, 19 local jobs for every €1 million spent. These digital platforms benefit both the environment and the economy, ensuring a greener future for all.

Why connected Solar?

Solar brings light to more people.

We differentiate our solar luminaires and subsystems with good quality and superior specifications.

With Interact, customers can manage connected solar lighting systems centrally and remotely which can provide meaningful insights and can create more business value.

* hybrid (on/off-grid solar)

State-of-the-art technology in your hands

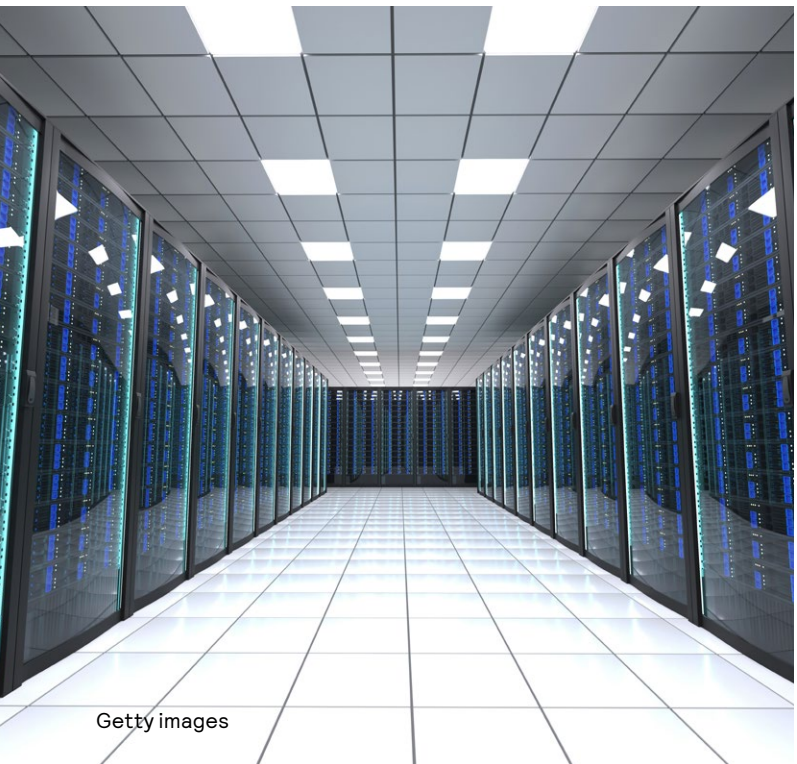
IT and network security

We take system security very seriously. Interact employs a number of measures to safeguard data integrity and network security.

To ensure that scheduling and control commands are executed properly all network communications are encrypted from end to end. Only registered devices can communicate with the system, and two-factor authentication prevents unauthorized third parties gaining access or tampering with data during transmission. All collected data is regularly backed up and encrypted.

Our policies and processes are aligned with global standards such as ISO/IEC 27001—Information Security Management Systems (ISMS) and the ISA/IEC 62443 standards suite for product development. We are the first lighting company to be certified to IEC 62443-4-1. The IEC 62443-4-1 is the Security Certification for the product development process which ensures that all identified security requirements are implemented, verified, tested, and documented with traceability. Our business processes are internally and externally audited on a regular basis.

www.signify.com/global/security-and-privacy-statement-for-connected-products



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Ecosystem partners

We are constantly expanding our ecosystem partner network. We currently work with partners including Axis, SAP, Cisco, Upciti and Ruckus on application developments in these specific areas:

- Motion and presence sensing
- Air quality monitoring
- Weather monitoring
- Pedestrian and vehicle traffic monitoring
- Traffic incident detection
- Road surface monitoring, e.g. extreme weather conditions
- Noise monitoring for incident detection, e.g. sudden loud noises
- Intrusion and zone crossing detection
- Personal safety, e.g. emergency panic buttons
- Parking violations
- Smart parking

Developing applications

Interact uses standardized data interfaces and open APIs to enable integration with existing city management systems. We are continuously developing future applications that extend beyond the lighting ecosystem using a combination of sensor technology, data sharing, and platform-level integrations.

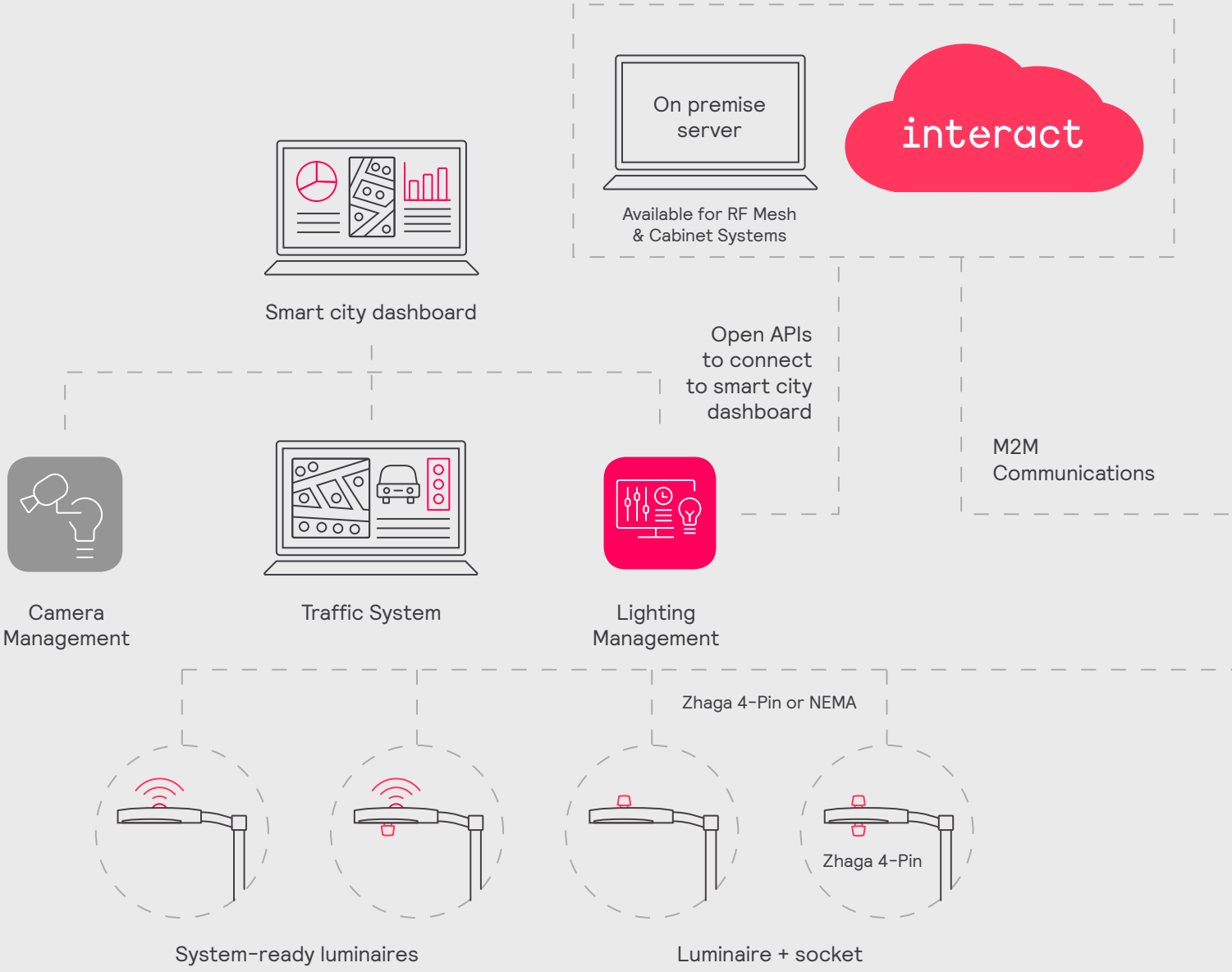
Each application is designed to be scalable and future-ready. Partners and third parties can also use the Interact APIs (including TALQ v2 Gateway & FiWARE APIs) to develop new smart city applications using the data collected via the connected lighting system.

www.developer.interact-lighting.com

How it works

Smart street lighting is part of the smart city environment. By integrating smart street lighting into a central dashboard, it enables the lighting to communicate with other smart city applications such as smart parking, waste management and traffic control.

Through this integration, the customer is able to extract, analyze and utilize the data generated from various systems like transportation, environment or traffic. This benefits all stakeholders across the whole range of municipal services.



Future-ready for sensors

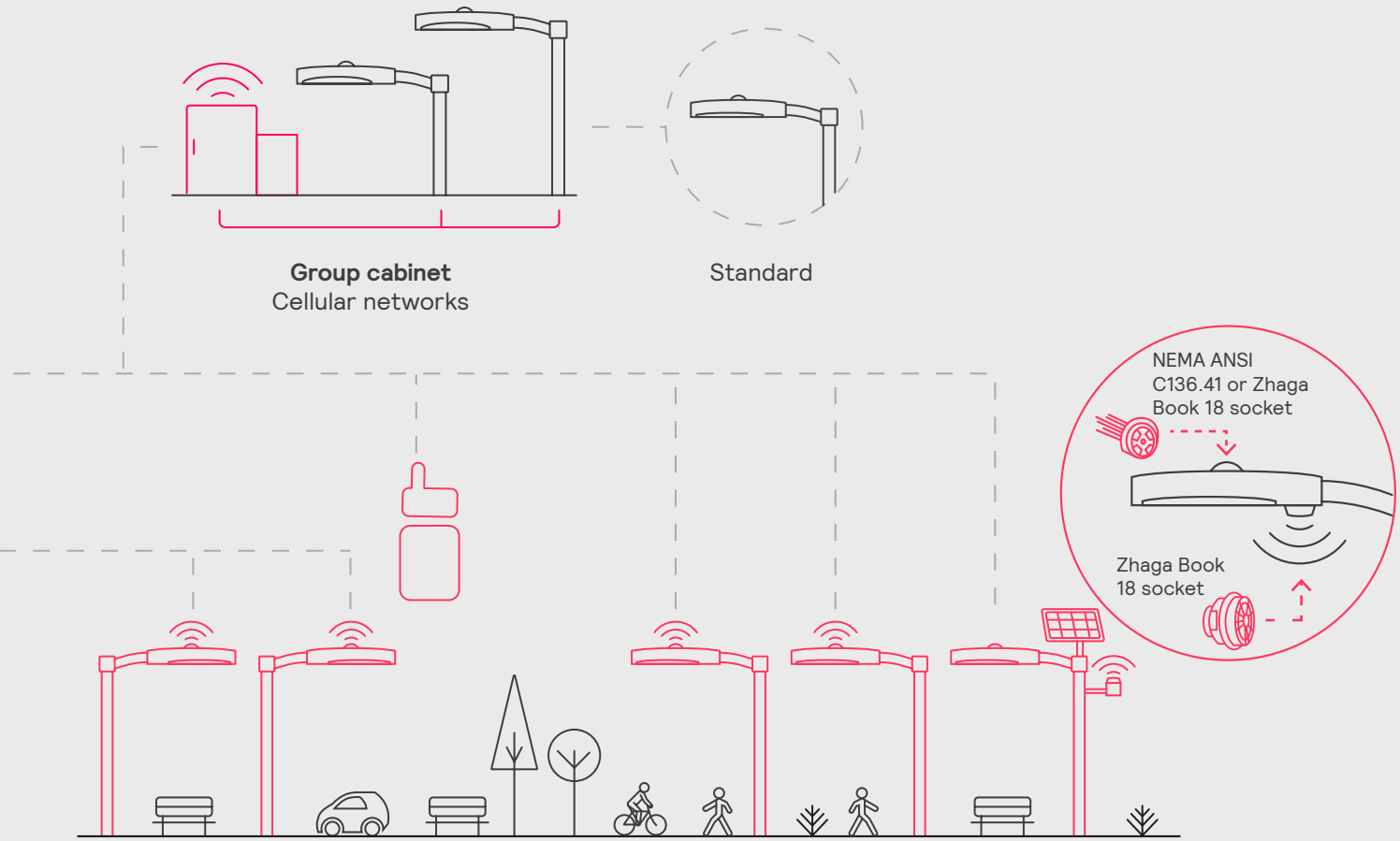
SR, D4i and ZD4i certified luminaires, nodes & sensors

Flexible group, individual light point and solar system

Optimize communications with Cellular and RF Mesh networks

Luminaire agnostic

Suitable for new & retrofit projects



Group cabinet
Cellular networks

Standard

Individual light point
RF mesh network (sub-GHz)

Individual light point
Cellular networks (2G/3G/4G-5G LTE M1)

Solar system

Street lighting for the people, of the people, and by the people

New York State

The vision

Growing urbanization is forcing mayors and municipal leaders to confront a host of economic, environmental and social issues. Smart Street Lighting NY is a collaboration between the New York Power Authority and various municipalities in upstate New York, with the goal of converting 500,000 street lights to LED by 2025. The program demonstrates the important role connected lighting can play in building smart city infrastructures.

The solution

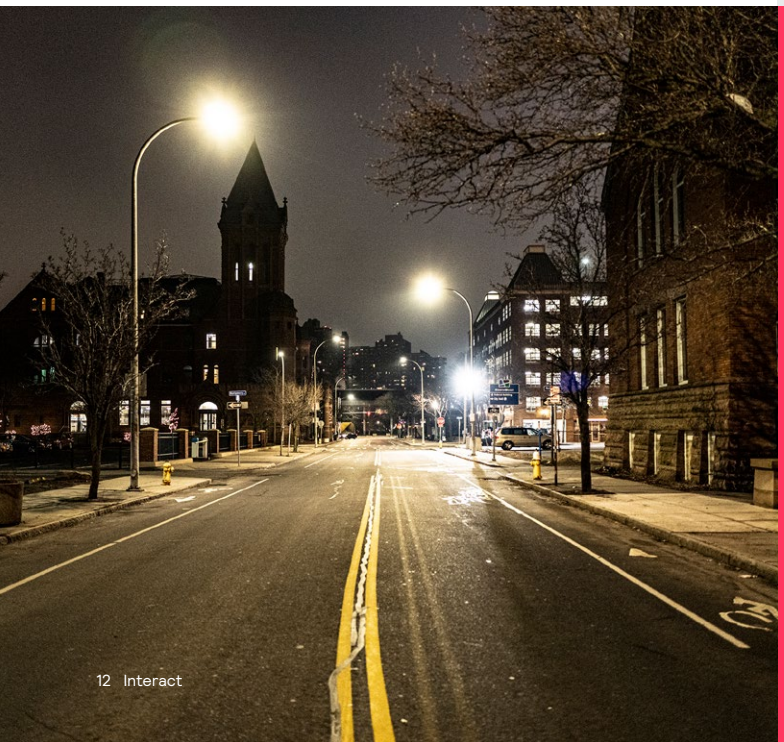
The mayors of Rochester, Albany, and White Plains are already seeing the benefits brought about by the Smart Street Lighting NY program. Where Interact has been installed, carbon emissions have been greatly reduced, citizens have reported feeling safer at night, and the infrastructure has been laid for future developments — all without breaking the bank thanks to an innovative and tailored pricing model.

Software applications used:

- Scene management
- Lighting asset management
- Energy optimization

Project details

- Energy savings can reach up to 70%
- Innovative pricing model grants financial freedom
- Connected lighting infrastructure can host new IoT capabilities for smart city deployments



> "I wanted to plan for the city of the future. We needed to ensure that we're investing now for generations to come."
>
> **Kathy Sheehan, Mayor of Albany, New York**

Interact powers a smart transformation

Jakarta, Indonesia

The vision

The project, a significant milestone in Jakarta's ongoing transformation into a smart city, involved upgrading 90,000 street lights to energy-efficient LED and connecting them with remote management software in just 7 months. This made it one of the fastest street lighting retrofits to date. Subsequent phases bring the number of upgraded street lights to 150,000, all centrally controlled and managed by Interact. It is the largest smart street lighting project in Southeast Asia.

The solution

The Interact system installation meant Jakarta could upgrade approximately 50% of its lighting by replacing inefficient mercury-vapor lamps with high quality, energy-efficient LEDs. It was also able to control and monitor its new street lights remotely and generate new insight into the operation and optimization of a key city resource.

Software applications used:

- Scene management
- Lighting asset management
- Energy optimization

Project details

- More than 150,000 connected LED street lights
- Supports Jakarta's transformation into a smart city
- The world's fastest street lighting retrofit and remote management project to date

"We are convinced that Interact smart connected lighting helps us reduce our energy expenses and improve public services."

DKI Jakarta, Government Office

Interact's global presence

Here are some countries already benefitting from Interact

Abu Dhabi, United Arab Emirates
Badajoz, Spain
Barcelona, Spain
Bergen, Norway
Bergisch Gladbach, Germany
Cardiff, United Kingdom
DKI Indonesia
London, United Kingdom
Los Angeles, USA
Rogaland, Norway
Madrid, Spain
Manchester, United Kingdom
Markham, Canada
Pune, India
Scotland, United Kingdom

As you can see, Interact has customers across the world, from New York to Jakarta. With more than 2,500 project sites and over 2.8 million connected light points in 58+ countries, we're growing year after year.

To find out more about our other stories, visit us at:
www.interact-lighting.com/city

Tilburg, the Netherlands
Eindhoven, the Netherlands
Trafford, United Kingdom
Warrington, United Kingdom
Wigan, United Kingdom

CIMAC Portugal
Malacca, Malaysia
Sala, Sweden
Canary Islands, Spain
Rochester, United States

Citta Sant Angelo, Italy
Szczecin, Poland
Singapore
Rotterdam, the Netherlands

Learn more about Interact in a smart city environment

www.interact-lighting.com/city

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