

FONDA TECHNOLOGY CO., LTD

SMART LIGHTING SMART CITY

GLOBAL PROFESSIONAL SMART LIGHTING SOLUTION PROVIDER



**START YOUR SMART CITY FOUNDATION
WITH FONDACITY PLATFORM.**

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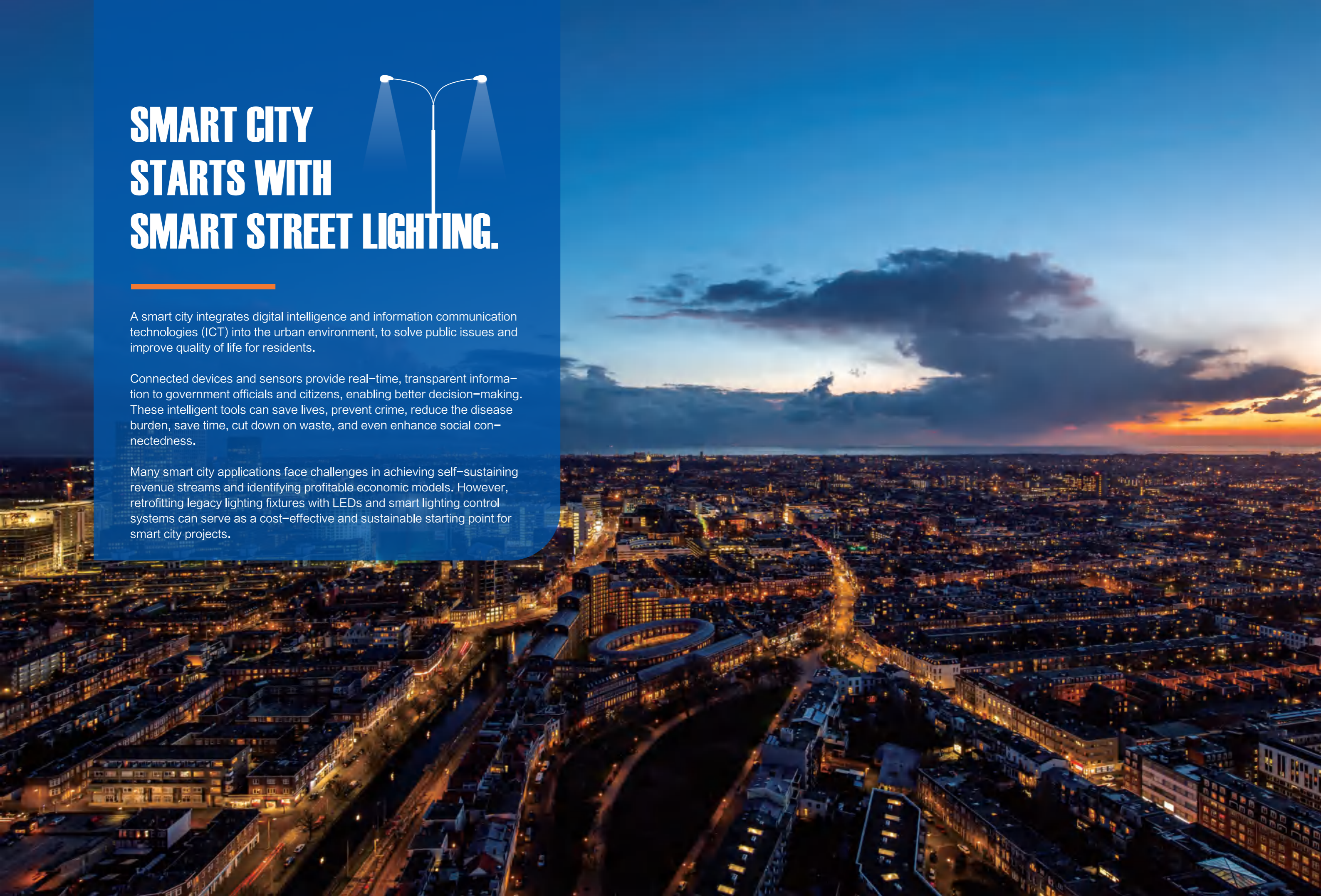


SMART CITY STARTS WITH SMART STREET LIGHTING.

A smart city integrates digital intelligence and information communication technologies (ICT) into the urban environment, to solve public issues and improve quality of life for residents.

Connected devices and sensors provide real-time, transparent information to government officials and citizens, enabling better decision-making. These intelligent tools can save lives, prevent crime, reduce the disease burden, save time, cut down on waste, and even enhance social connectedness.

Many smart city applications face challenges in achieving self-sustaining revenue streams and identifying profitable economic models. However, retrofitting legacy lighting fixtures with LEDs and smart lighting control systems can serve as a cost-effective and sustainable starting point for smart city projects.



ABOUT US

Founded by Carnegie Mellon PhD Team in Colorado, USA.

Founded in 2011, Fonda is a professional solution provider of smart outdoor lighting control systems and smart city infrastructures. Fonda has implemented cutting-edge smart solutions in more than 150 countries and over 350 cities and regions worldwide in the past 12 years. With smart lighting control solutions, cities not only reduce energy consumption and operating costs but also prepare for smart city digitalization. The FondaCity platform integrates wireless remote control for street lighting, facade lighting, tunnel lighting, and solar lighting, serving as the bridge to a smart city. It can also be scaled for various smart city applications, including smart parking, smart waste management, and smart traffic.

- National high-tech R&D Center committed to the innovative R&D in the field of IoT and cloud computing.
- Certified by ISO9001:2015 Quality Management System.
- And comprehensive solution provider for IoT technology such as LTE-CAT.1, NB-IoT, LoRaWAN, Power Cabinet Control, Solar, Tunnel, PLC, Zigbee, RF, etc.



Founded in **2011**

Fonda is a professional solution provider of smart outdoor lighting control system and smart city infrastructures.



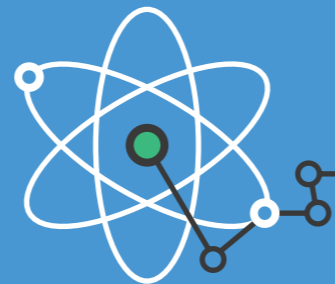
1.5 Mil+

Smart controllers deployed globally



150+

Patents holding, owner of core technology



12

Excellent and comprehensive IoT solutions



International Ranking Top 5



ASSOCIATE MEMBER

TALQ member



Average energy saving 75%

According to the experience of other cities, it can achieve 60% energy saving from LED replacement and further 10-20% from dimming.



Significant O&M saving

Operation and maintenance savings exceeded energy savings in many cases, due to the longer lamp lifetime and reduced truck rolls.

Environmental benefits



Less carbon emissions and light pollutions lead to better environment for citizens and wildlife.



Benefits of Smart Street Lighting



Smart city ready

Connected streetlights provide foundation for future smart city applications and reduce the cost of re-installation.



Pedestrian and traffic safety

On-demand lighting means better lighting quality, lower crime rate and fewer traffic accidents.





FondaCity

Smart city platform

FondaCity is a smart city platform based on streetlight and scalable to other public infrastructures, which has a wide coverage overall the city.

Data Collecting

The data collected from smart devices attached in existing and new infrastructures transmits to central platform via wired and wireless communications such as Zigbee, LoRaWAN, NB-IoT, RF-Mesh, GSM and LTE. The real-time data will be visualized and displayed in a central command center to provide valuable information for decision making, quick response on events, and prevention for potential risks.

Remote Control

Smart devices can be remotely controlled in real-time or operated on a preset schedule. Tasks based on time, calendar, and sensor data can be executed for individual devices or in groups. In addition to street light control, the system also supports audio, video and text tasks for LED displays and broadcasting speakers.

City Infrastructure

The complete profile of each infrastructure asset, from manufacture to retirement, is recorded in the database. This includes basic product information, installation and maintenance history, current status, and alarm history. By connecting previously isolated devices into one centralized management system, all information can be tracked and analyzed to make cities smarter, more efficient and sustainable.

Easy Integration

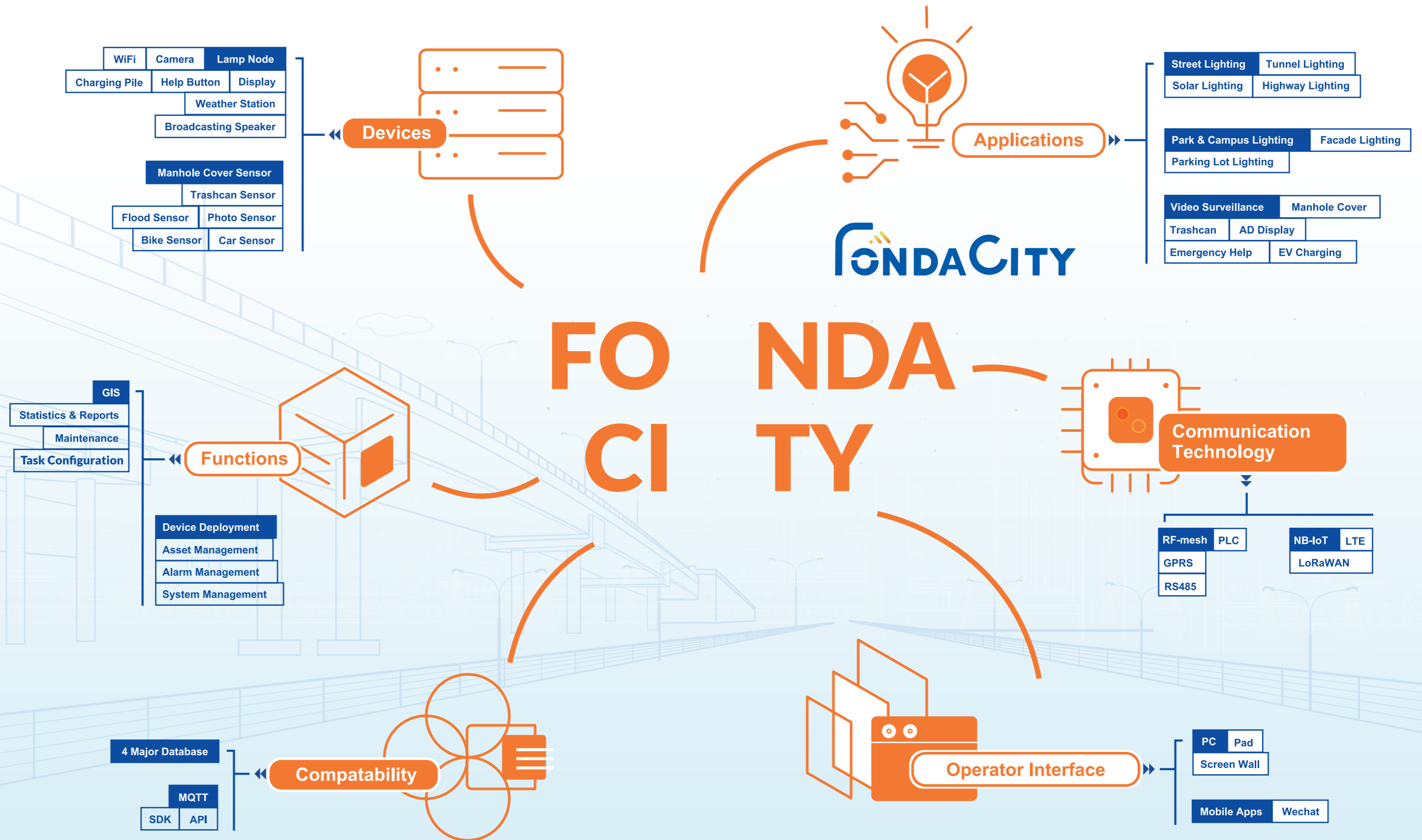
Smart city encompasses various divisions including smart security, energy, healthcare, mobility, water management, waste management, and more. This means a city has many distinct subsystems. The key to becoming a truly smart city is integrating data from these siloed systems. With open API and MQTT protocols, the FondaCity Platform can be integrated into third-party software and smart city dashboards. Likewise, data from third-party systems can be made available for integration into the FondaCity Platform.

Proactive Maintenance

Alarms on city infrastructure like power abnormalities, device malfunctions, communication lost, and theft can be sent as notifications and alerts to computers and mobile devices. This enables decision-makers and city workers to pre-plan inspections and address failures proactively. With ticket handling, prioritized management, optimized routes for inspection and maintenance vehicles, labor and truck roll costs can be reduced while improving efficiency.

System Security

FondaCity platform implements several measures to ensure stable long-term operation, including event recording, password protection, multi-level user management, and remote backup. This provides strong fault tolerance and recovery capabilities. A variety of network security protections have been designed to guard against malicious attacks, ensuring a high degree of security and confidentiality. Strict access authentication is performed on all equipment and users accessing the system to guarantee secure and stable connections.





SMART LIGHTING SOLUTION

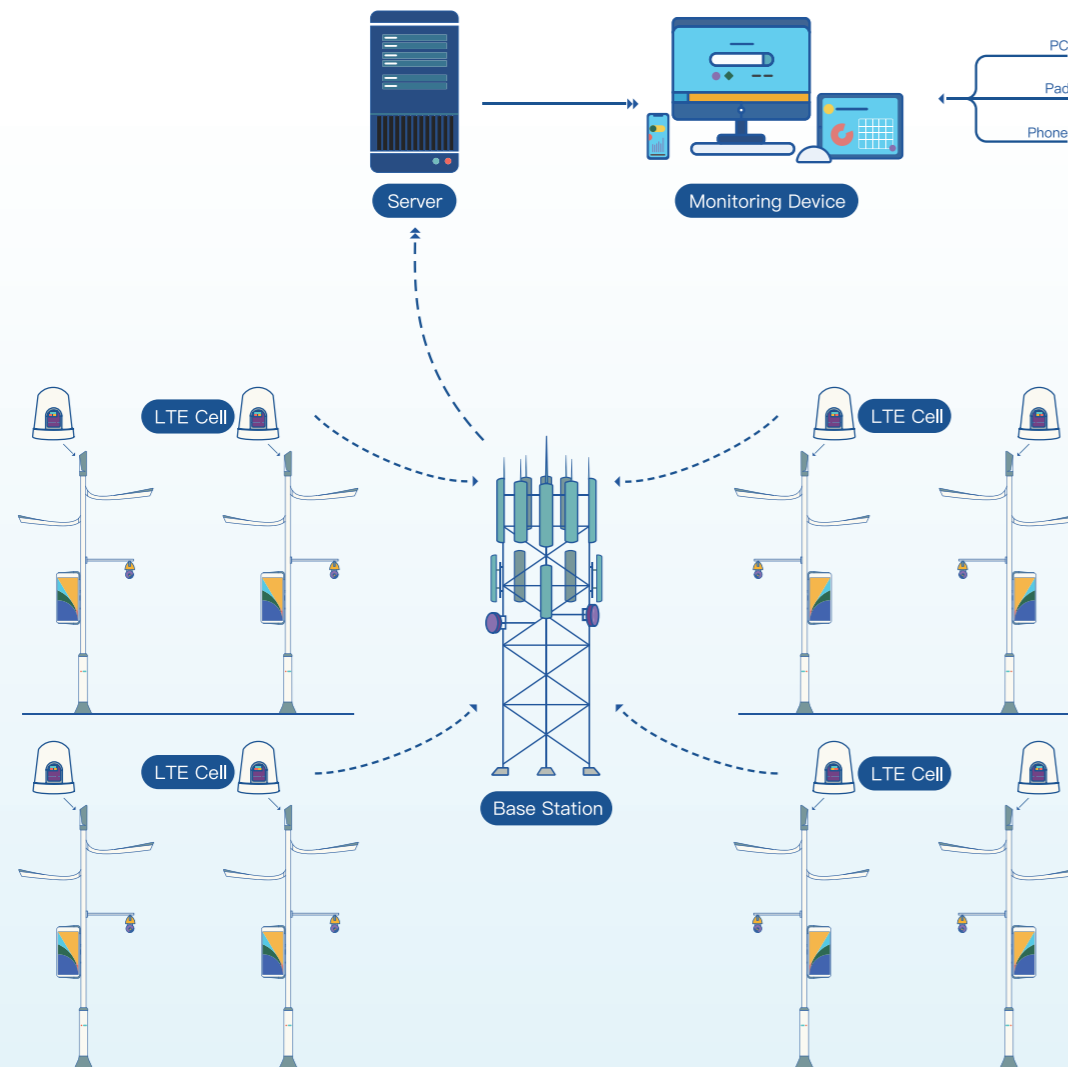
Excellent and comprehensive solution provider for IoT street light such as LTE-CAT.1, NB-IoT, LoRaWAN, Power Cabinet Control, Solar, Tunnel, PLC, Zigbee, RF, etc.

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LTE-CAT.1 Solution

Application

Any place that can receive LTE(Cat.1/Cat.4) signal.



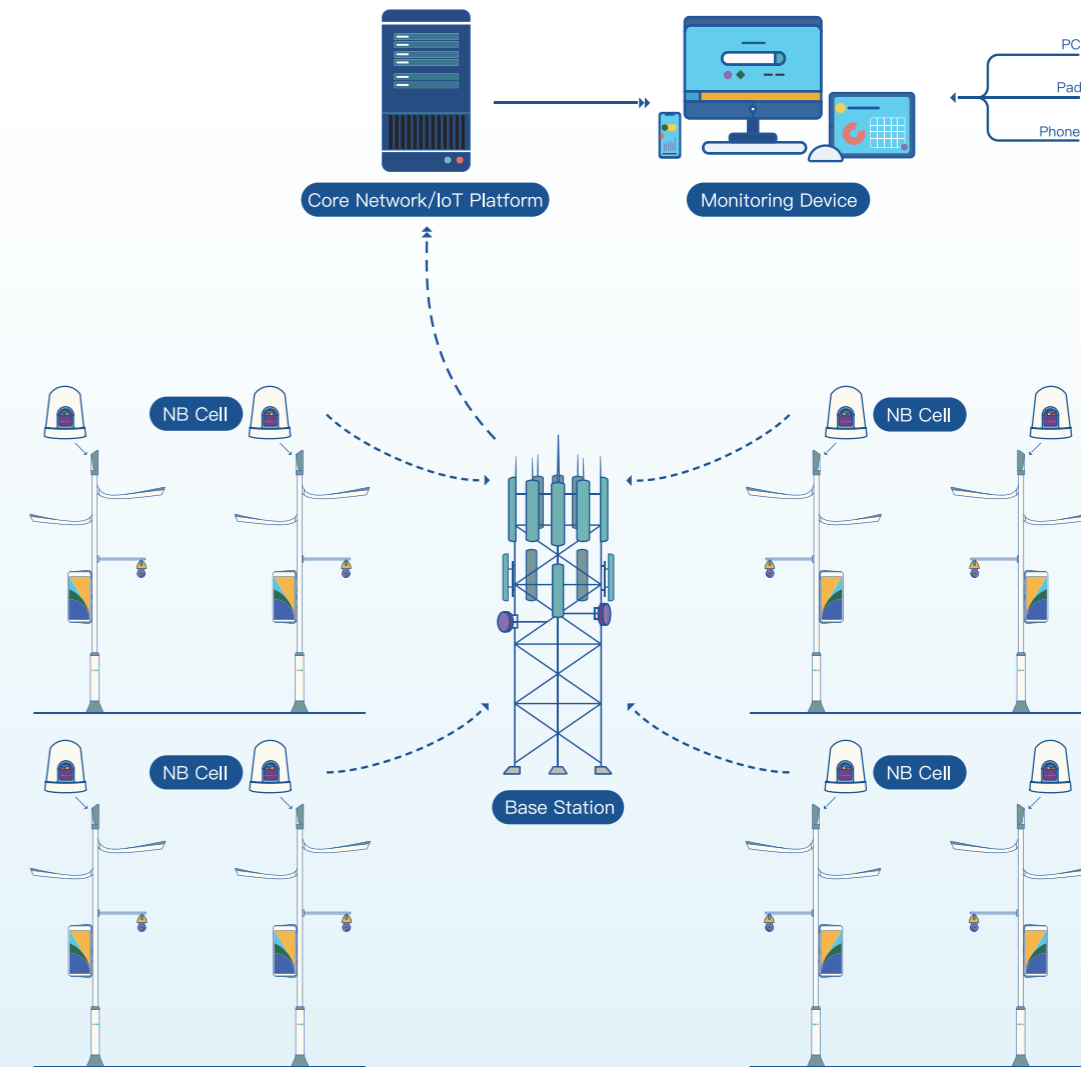
Main Features

- LTE(Cat.1/Cat.4) wireless communication.
- No limit on the number of lamp controllers and transmission distance.
- Supports two dimming modes: 0-10V and DALI.
- It uses base station provided by local network operator, no need to install gateways.
- Remote real time control and scheduled lighting by group or individual lamp.
- Alarm on the lamp failure.
- Pole tilt, GPS options

NB-IoT Solution

Application

Any place that can receive NB-IoT signal.



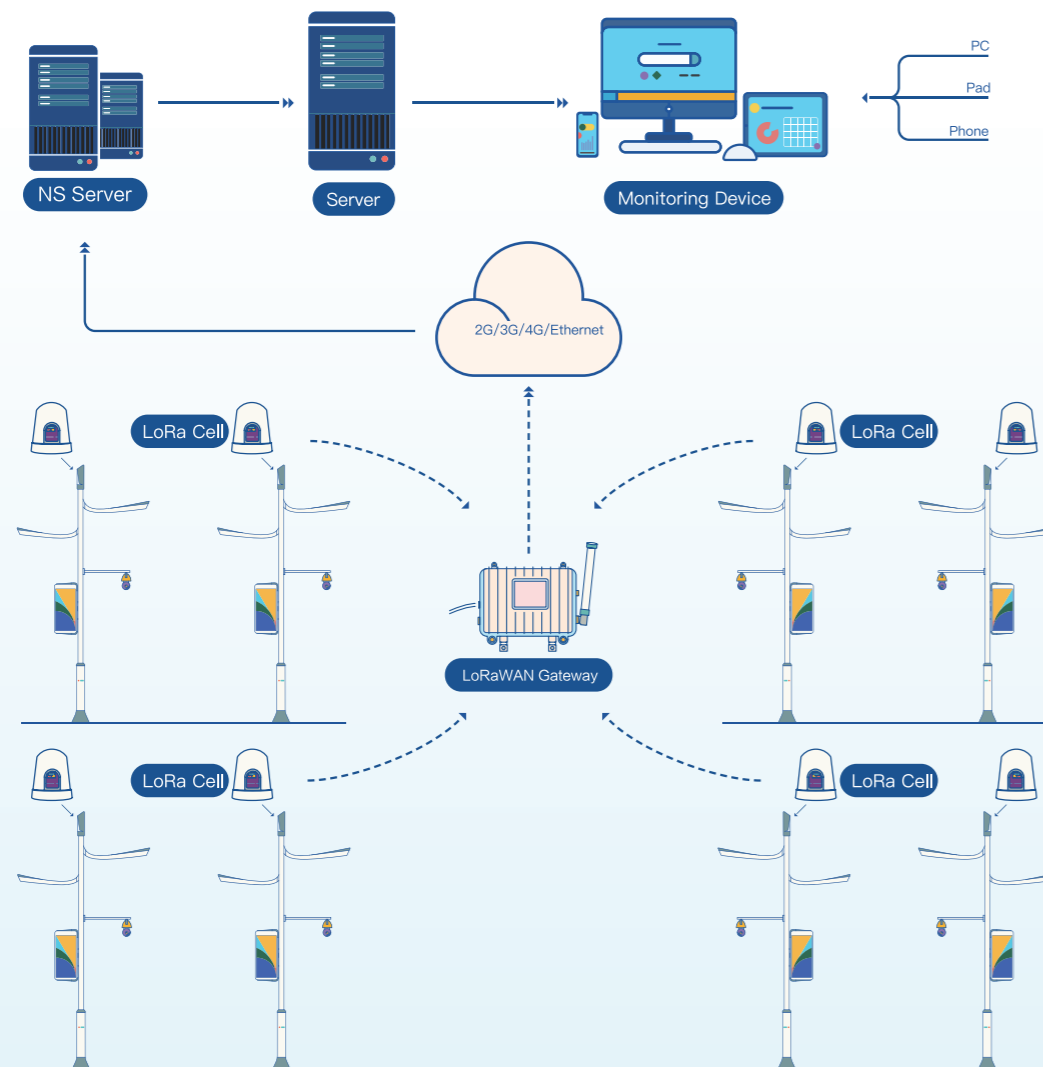
Main Features

- NB-IoT wireless communication.
- No limit on the number of lamp controllers and transmission distance.
- Supports two dimming modes: 0-10V and DALI.
- It uses base station provided by local network operator, no need to install gateways.
- Remote real time control and scheduled lighting by group or individual lamp.
- Alarm on the lamp failure.
- Pole tilt, GPS options

LoRaWAN Solution

Application

Remote lighting control of street lights, parking lot, gas station, park, island and etc.



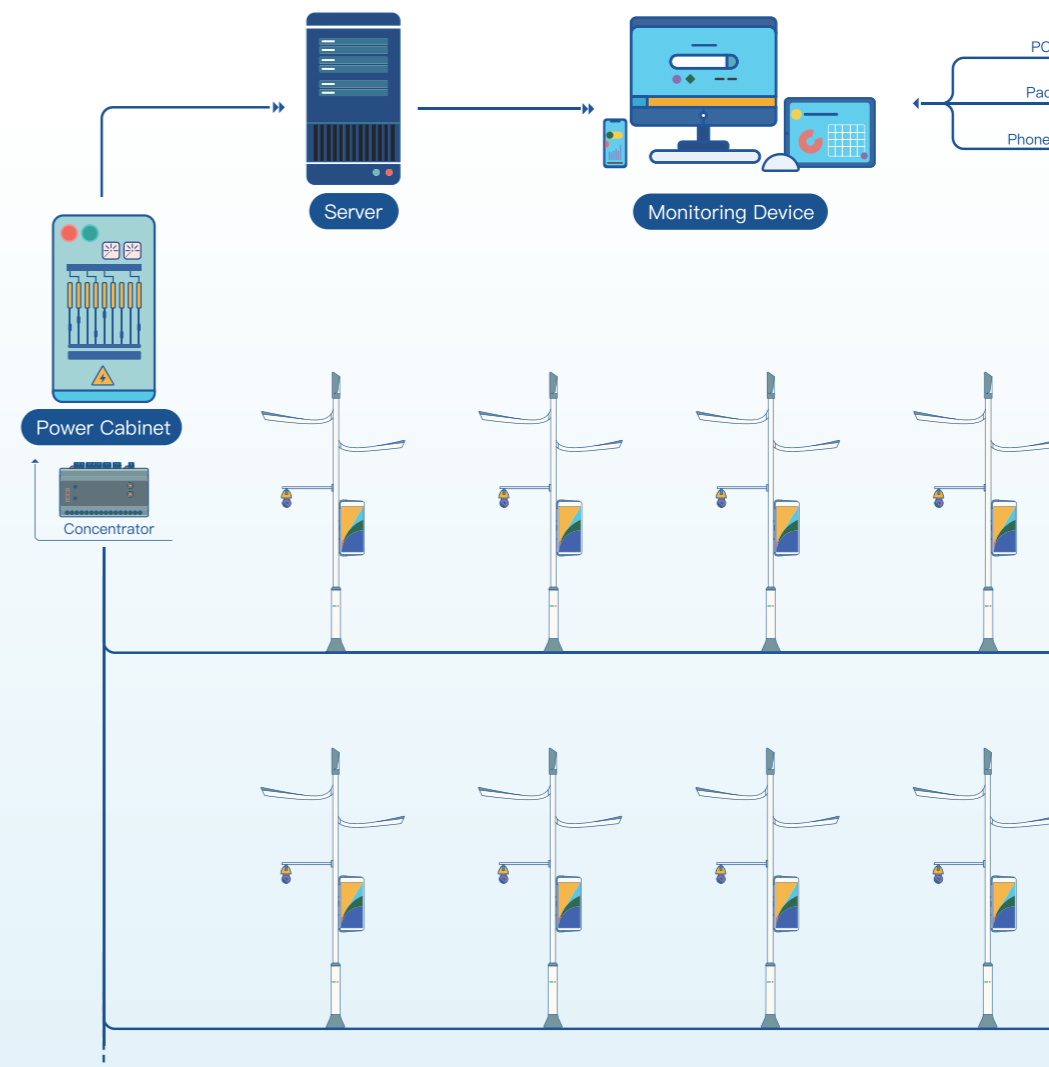
Main Features

- Long range low power radio frequency communication, supports standard LoRaWAN specification.
- Up to 2,000 lamp controllers can be managed by a gateway with maximum transmission distance of 1500m.
- Supports two dimming modes: 0-10V and DALI.
- LoRaWAN Gateway and network server for device management are needed.
- Remote scheduled lighting by group or individual lamp and data collecting.
- Alarm on the lamp failure.
- Pole tilt, GPS options.

Power Cabinet Control

Application

Remote lighting control of street, tunnel, parking lot and tech park with cabinet.



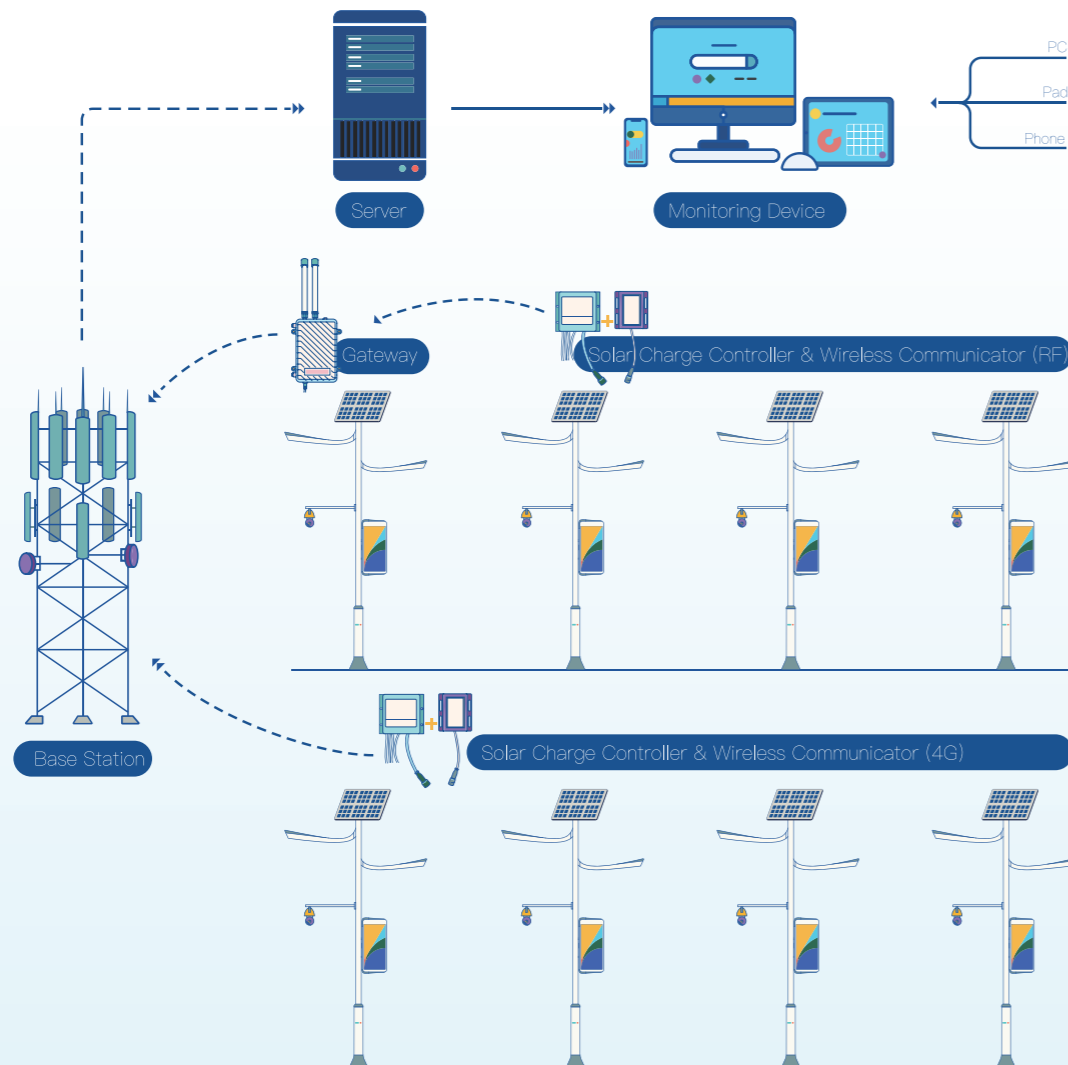
Main Features

- Remote real time control and scheduled lighting on the circuit based on time and sunrise/sunset.
- Alarm on the power supply status of the cabinet and automatic notification.
- Energy monitoring and billing report on cabinet level.

Solar Solution

Application

Remote lighting control of Solar lights, remote areas with unstable network and power supply.



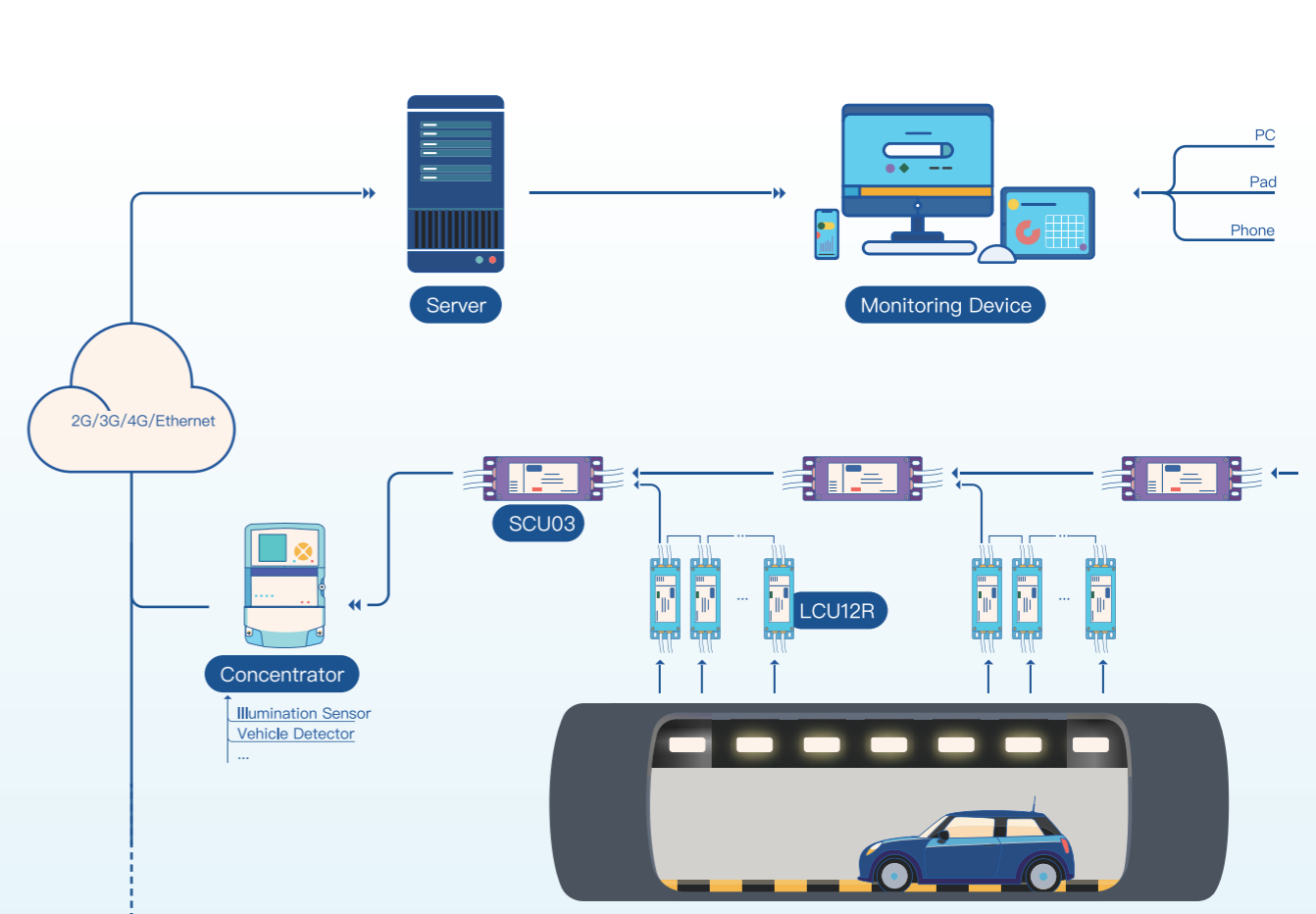
Main Features

- RF-mesh and LTE communication available.
- The IoT communicator works with solar charging controller to control the solar lamps and monitor on the status of solar battery, panel and lamp.
- Lighting time and dimming plan from central management platform
- Alarm on the lamp, battery and panel failure.

Tunnel Solution

Application

Remote lighting control of tunnel, sports stadium and indoor lighting.



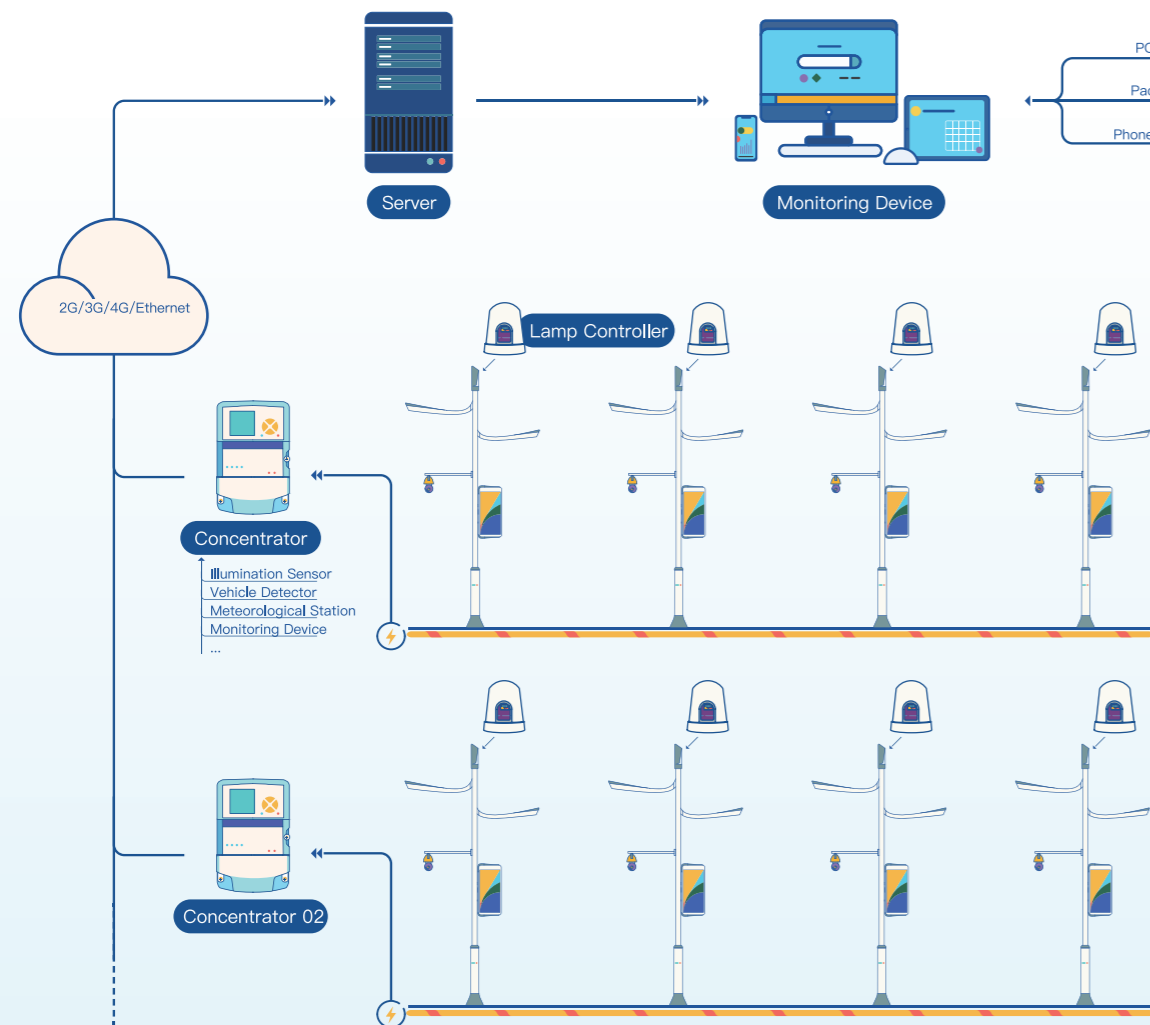
Main Features

- RS485 communication, the total distance after increasing the transmission distance through the signal controller is up to 3km.
- A signal controller can support 50-80 lamp controllers, up to 5000 lamp controllers can be managed by a concentrator.
- The lamp controller can control lighting fixtures such as HPS and LED lamp with power up to 400W.
- Supports two dimming modes: PWM and 0-10V.
- With a data transmission rate of 256Kbps, it is suitable for applications that require high communication speeds and have many interference factors, such as real-time tunnel dimming.
- Remote real time control and scheduled lighting by group or individual lamp, remote control on the power circuit.
- Alarm on the power supply of the cabinet and lamp parameters.

PLC Solution

Application

Remote lighting control of street lights, façade lighting, tunnel, parking lot with power cabinet.



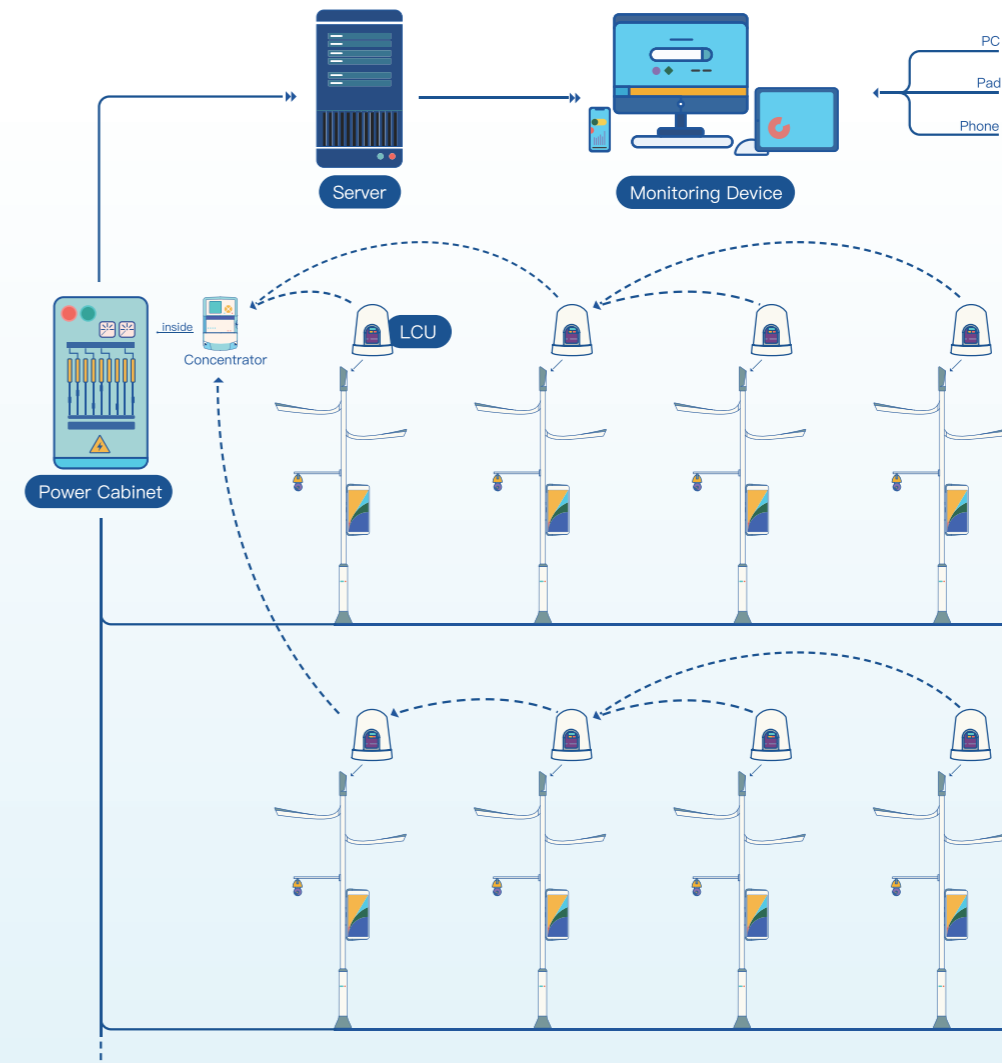
Main Features

- Power line communication, point-to-point transmission distance is up to 500m, the total distance after automatic relay by the lamp controllers is no more than 2km.
- Up to 500 lamp controllers can be managed by a concentrator.
- The lamp controller can control lighting fixtures such as sodium lamp, LED lamp and ceramic metal halide lamp with power up to 400W.
- Supports two dimming modes: PWM and 0-10V, reverse mode can be configured.
- PLC solution uses the original power cable for signal transmission, no need to install signal lines.
- Remote real time control and scheduled lighting by group or individual lamp, remote control on the power circuit.
- Alarm on the power supply of the cabinet and lamp parameters.

RF-Mesh Solution

Application

Remote lighting control of street lights, parking lot, gas station, park, island and etc.

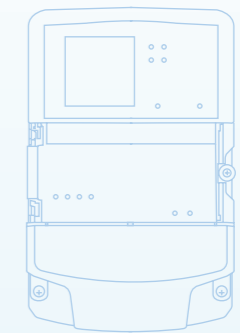


Main Features

- Long range low power radio frequency communication with one time relay.
- Up to 1000 lamp controllers can be managed by a concentrator with maximum transmission distance of 4000m after relay by a lamp controller.
- Supports two dimming modes: 0-10V and DALI.
- Private wireless network by RF-Mesh concentrator, the network server is not needed compared to LoRaWAN.
- Remote real time control and monitor on the lamps, scheduled lighting by group or individual lamp.
- Alarm on the lamp failure.
- Pole tilt, GPS options



HARDWARE



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Concentrator

Product description

Work with web-based software enables remote configuration, monitoring, control, reporting, alarms, data reading, update, and self-running based on astronomical calendars.



Product description

Work with web-based software enables remote configuration, monitoring, control, reporting, alarms, data reading, update, and self-running based on astronomical calendars.



Data Concentrator

FONDA RTU200

UPLINK COMMUNICATION GPRS / 3G / 4G / Ethernet

DOWNLINK COMMUNICATION PLC / RF-mesh / RS485

METERING Voltage, current, active / inactive power, power factor, power leakage, energy consumption and etc.

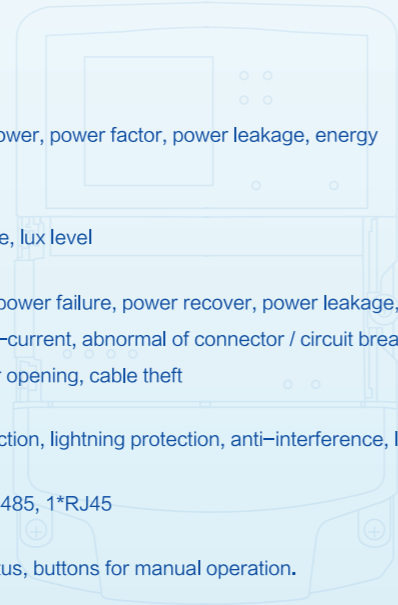
LIGHTING SCHEDULE Based on calendar, sunset / sunrise, lux level

ALARM Day burning or accidental lighting, power failure, power recover, power leakage, over-voltage, under-voltage, over-current, abnormal of connector / circuit breaker, cabinet tilt, cabinet water ingress, cabinet door opening, cable theft

PROTECTION Overcurrent and overvoltage protection, lightning protection, anti-interference, IP54

PORT 4*DO, 6*DI, 2*AC DI, 1*USB, 1*RS485, 1*RJ45

OTHER LCD display for parameter and status, buttons for manual operation.



Data Concentrator

FONDA RTU700

UPLINK COMMUNICATION GPRS / 3G / 4G / Ethernet

DOWNLINK COMMUNICATION PLC / RS485

METERING Voltage, current, active power, power factor, power leakage, energy consumption and etc.

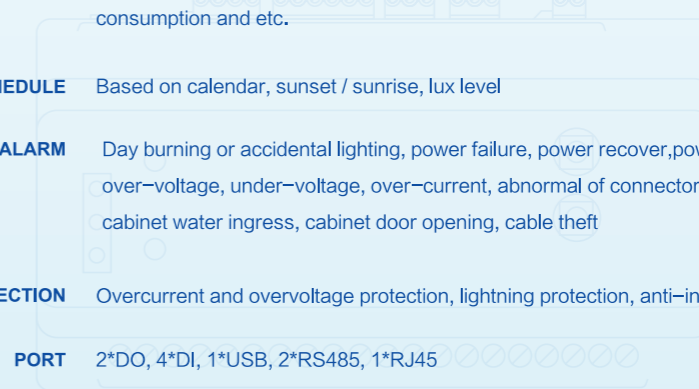
LIGHTING SCHEDULE Based on calendar, sunset / sunrise, lux level

ALARM Day burning or accidental lighting, power failure, power recover, power leakage, over-voltage, under-voltage, over-current, abnormal of connector / circuit breaker, cabinet tilt, cabinet water ingress, cabinet door opening, cable theft

PROTECTION Overcurrent and overvoltage protection, lightning protection, anti-interference

PORT 2*DO, 4*DI, 1*USB, 2*RS485, 1*RJ45

OTHER RTC and GPS





Lamp Controller

Product description

Work with web-based software enables remote configuration, monitoring, control, reporting, alarm and updating.

Optional functions

· RTC, GPS, Tilt-sensor, Photocell Sensor



Product description

Work with web-based software enables remote configuration, monitoring, control, reporting, alarm and updating.

Optional functions

· RTC, GPS, Tilt-sensor, Photocell Sensor



Lamp Controller

NEMA SERIES

COMMUNICATION MODULE	PLC / LoRaWAN / RF-mesh / NB-IoT / LTE
METERING	Voltage, current, power factor, power, energy consumption and etc.
LIGHTING SCHEDULE	Based on calendar, sunset / sunrise, lux level
ALARM	Lamp failure, lamp lifetime alert, power failure, compensation capacitor failure, over-voltage, over-current, pole tilt (optional)
PROTECTION	Industrial-grade waterproof casing, lightning protection, IP65
INTERFACE	NEMA 7-PIN interface, plug and play
DIMMING	0-10V, DALI
OPTIONS	GPS, RTC, Photocell, Tilt sensor, OTA

Lamp Controller

ZHAGA SERIES

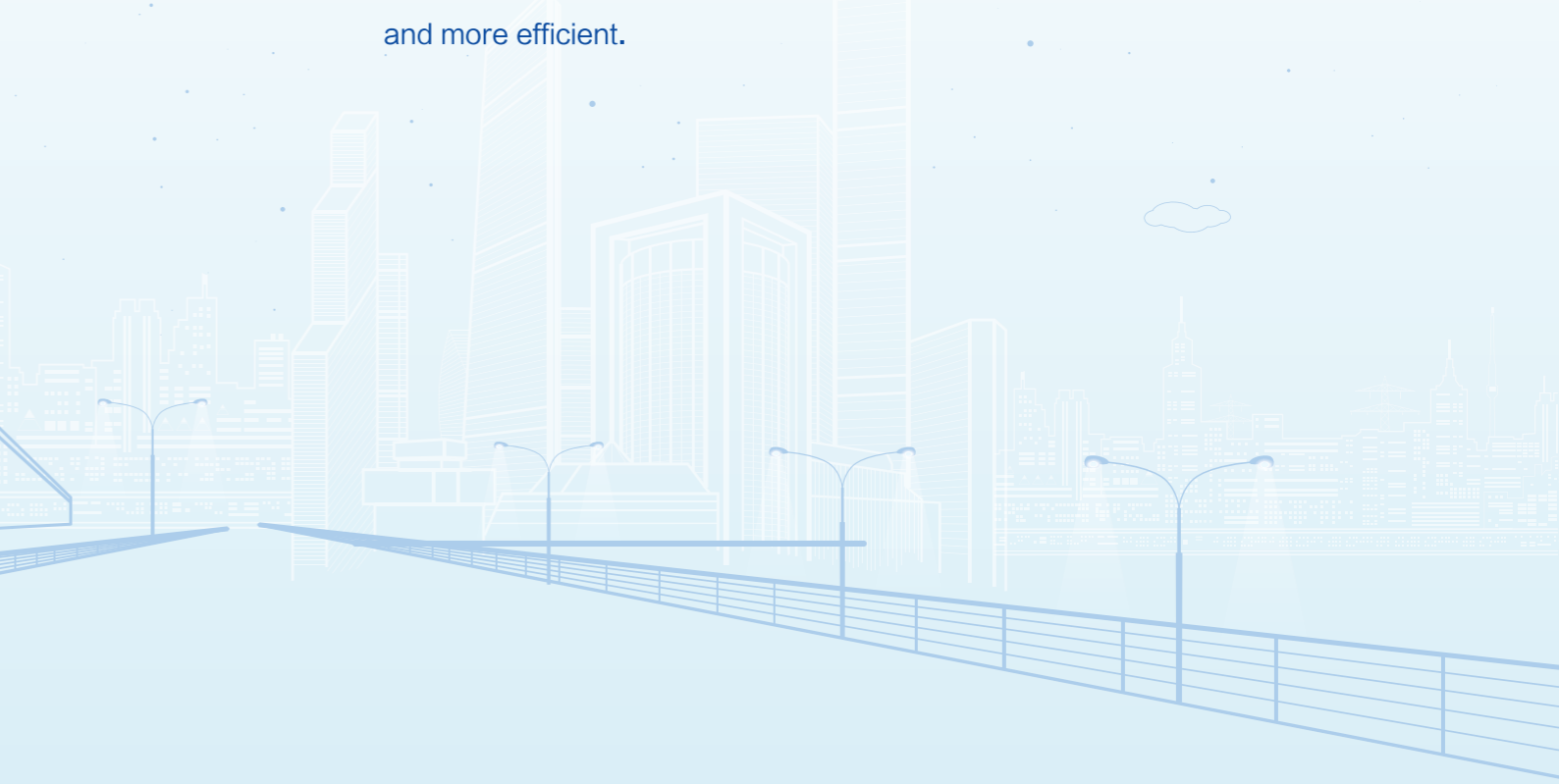
COMMUNICATION MODULE	LTE / LoRaWAN
METERING	Voltage, current, power factor, power, energy consumption, etc.
LIGHTING SCHEDULE	Based on calendar, sunset / sunrise, lux level
ALARM	Lamp failure, lamp lifetime alert, power failure, compensation capacitor failure, over-voltage, over-current, pole tilt (optional)
PROTECTION	Industrial-grade waterproof casing, lightning protection, IP66
INTERFACE	Zhaga 4-pin interface, plug and play, optimized for Philips Xitanium SR LED driver
DIMMING	Dali2.0, D4i
OPTIONS	GPS, RTC, Photocell, Tilt sensor, OTA



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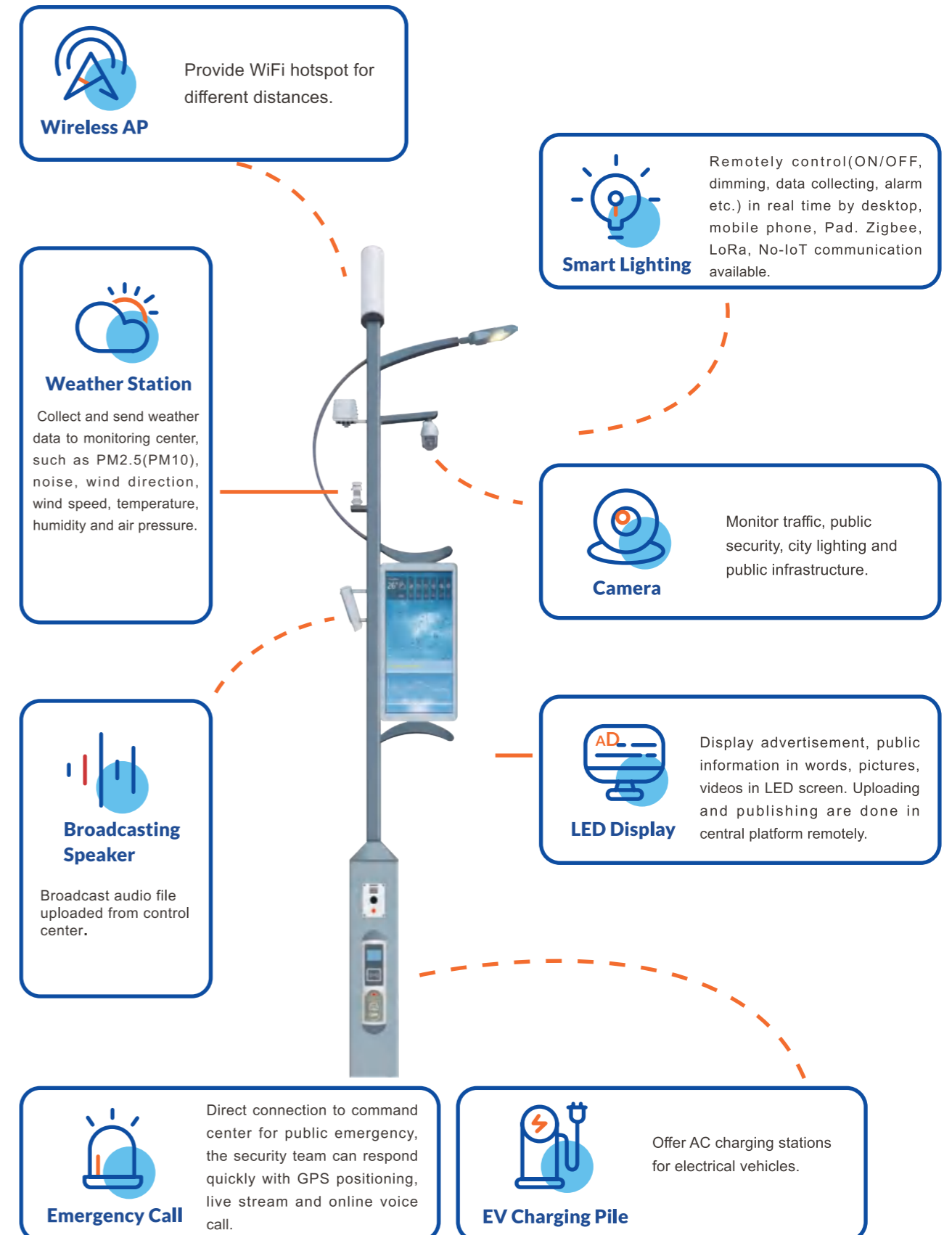
SMART POLE

Smart pole plays an important role as one of the IoT infrastructures in smart city. It can be equipped with 5G micro base station, weather station, wireless AP, camera, LED display, public help terminal, online speaker, charging pile and other devices. Smart pole becomes the data collecting facility of smart city, and share to each responsible department, ultimately achieving a more efficient and integrated city management. Fonda smart pole is deployed in FondaCity , so that all of the management and operation could be done in a central platform, making the maintenance work easier and more efficient.



Multifunction Lamp Pole

Fonda smart pole is deployed in the FondaCity platform, enabling centralized management and operation through a central platform, making maintenance work easier and more efficient.





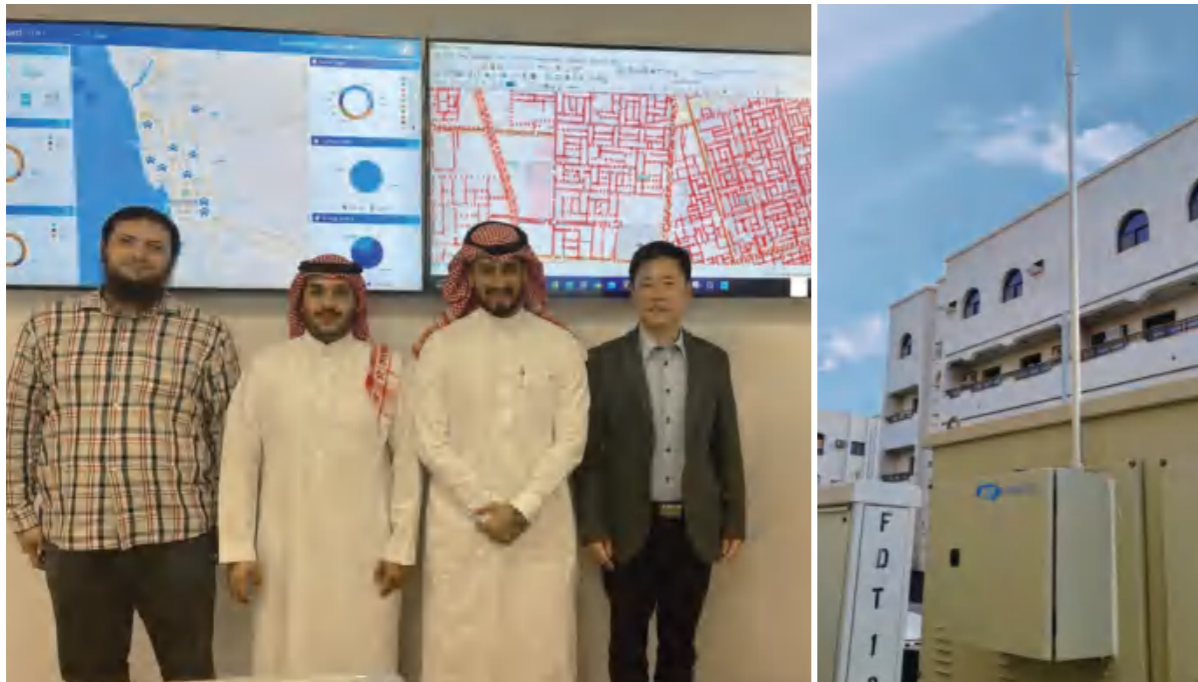
CASES

Global Professional
Smart Lighting Solution Provider

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Cases



Location: Saudi Arabia Solution: LoRa-Mesh Quantity: 180,000 sets



Location: Malaysia Solution: RF-Mesh Quantity: 10,000 sets



Location: Nigeria Solution: RF-Mesh Quantity: 50,000 sets



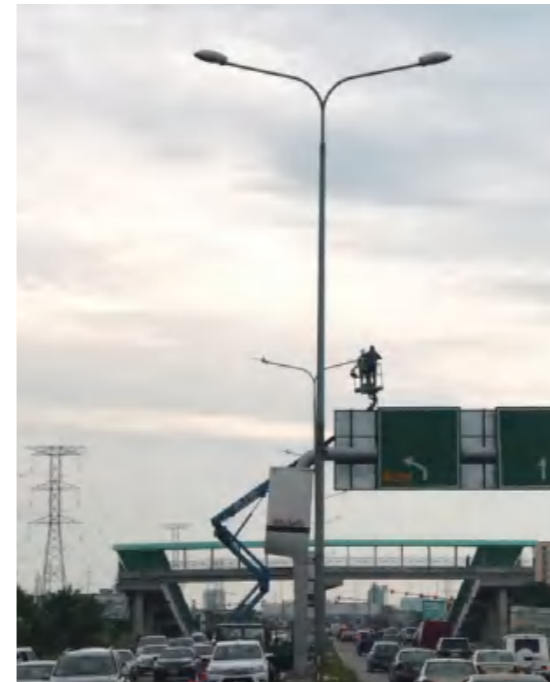
Location: Thailand Solution: LTE-Cat.1 Quantity: 7,000 sets



Cases



Location: Greece Solution: Lorawan Quantity: 5,500 sets



Location: Indonesia Solution: PLC<E Quantity: 150,000 sets



Location: Australia Solution: RF-Mesh Quantity: 20,000 sets



Location: Spain Solution: PLC Quantity: 20,000 sets



Location: Switzerland Solution: RF-Mesh Quantity: 2,000 sets



Location: Romania Solution: RF-Mesh Quantity: 10,000 sets