



Fonda Technology

Smart Outdoor Lighting Control

2.1 How it works



Administrator
sign out



MONITORING SYSTEM



PLATFORM MODULE



MANAGEMENT SUPPORT

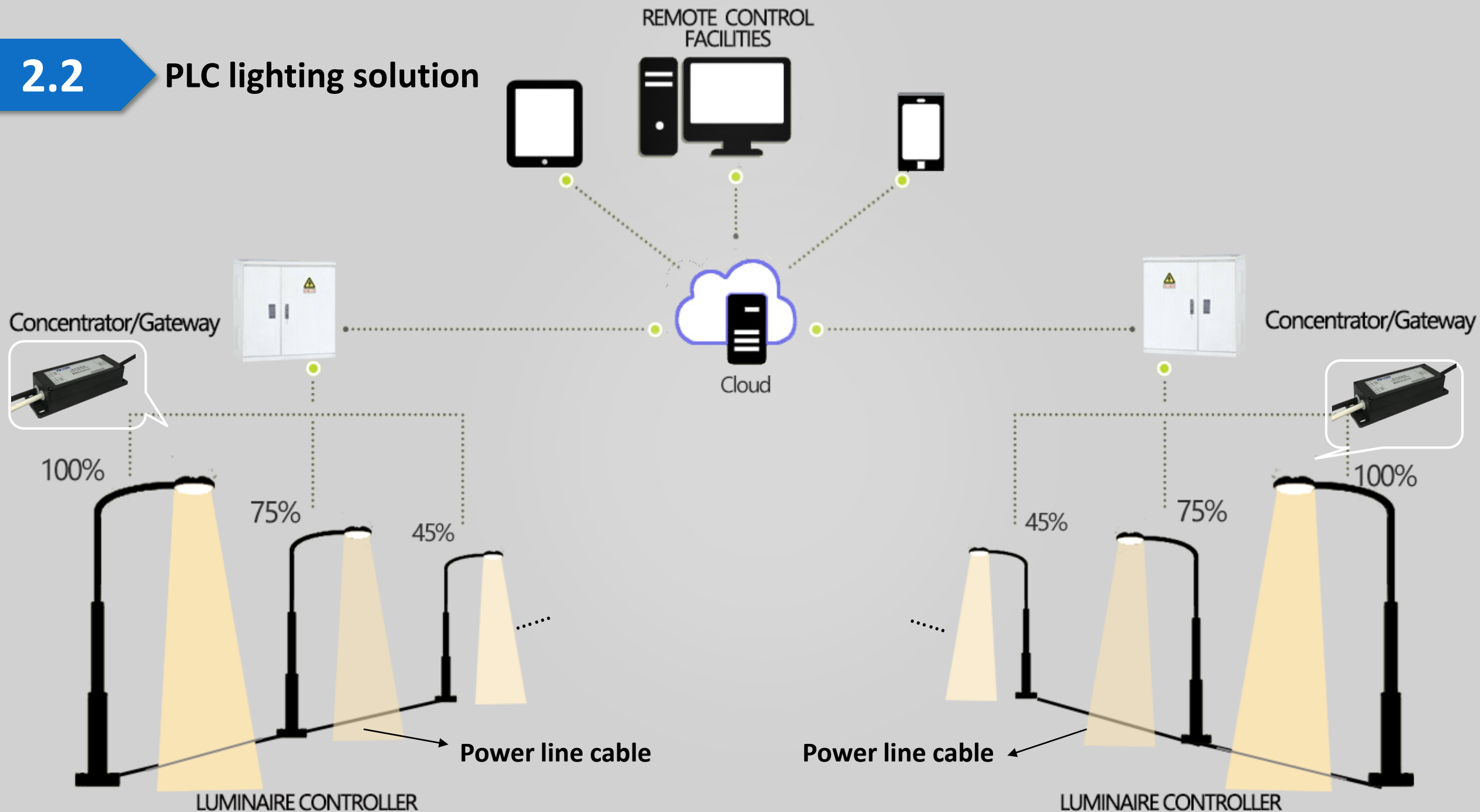


Please select your item to begin

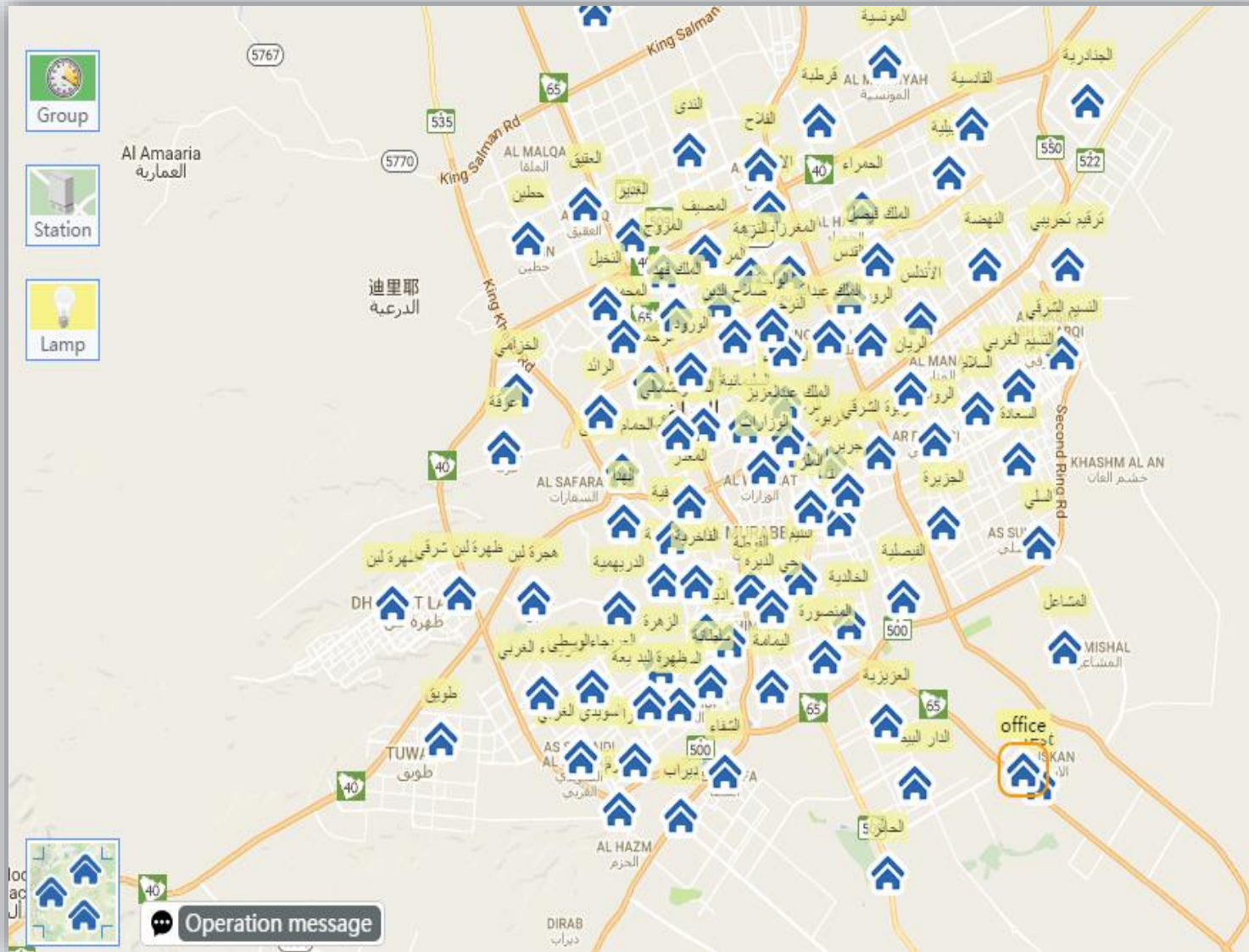


2.2

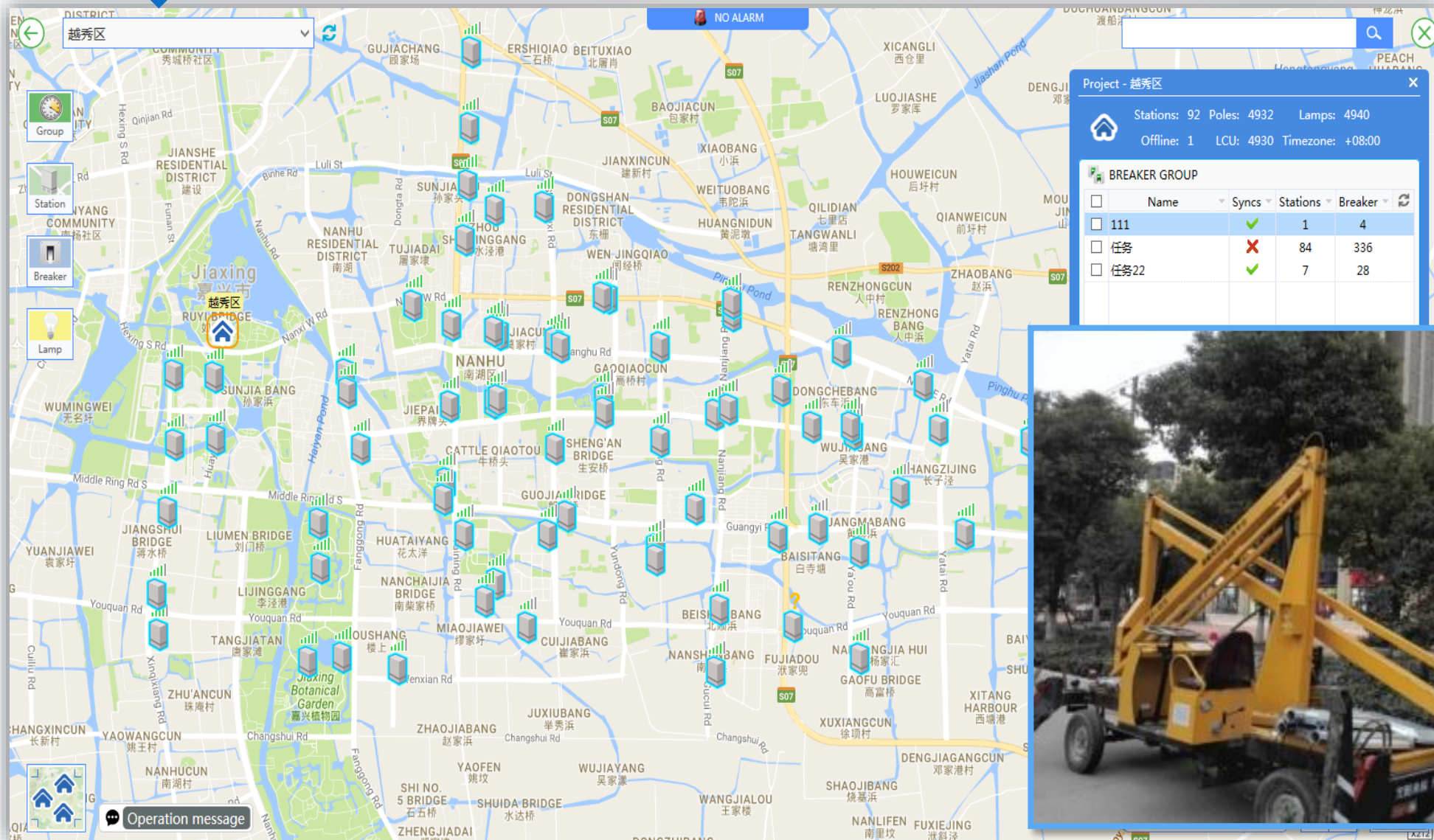
PLC lighting solution



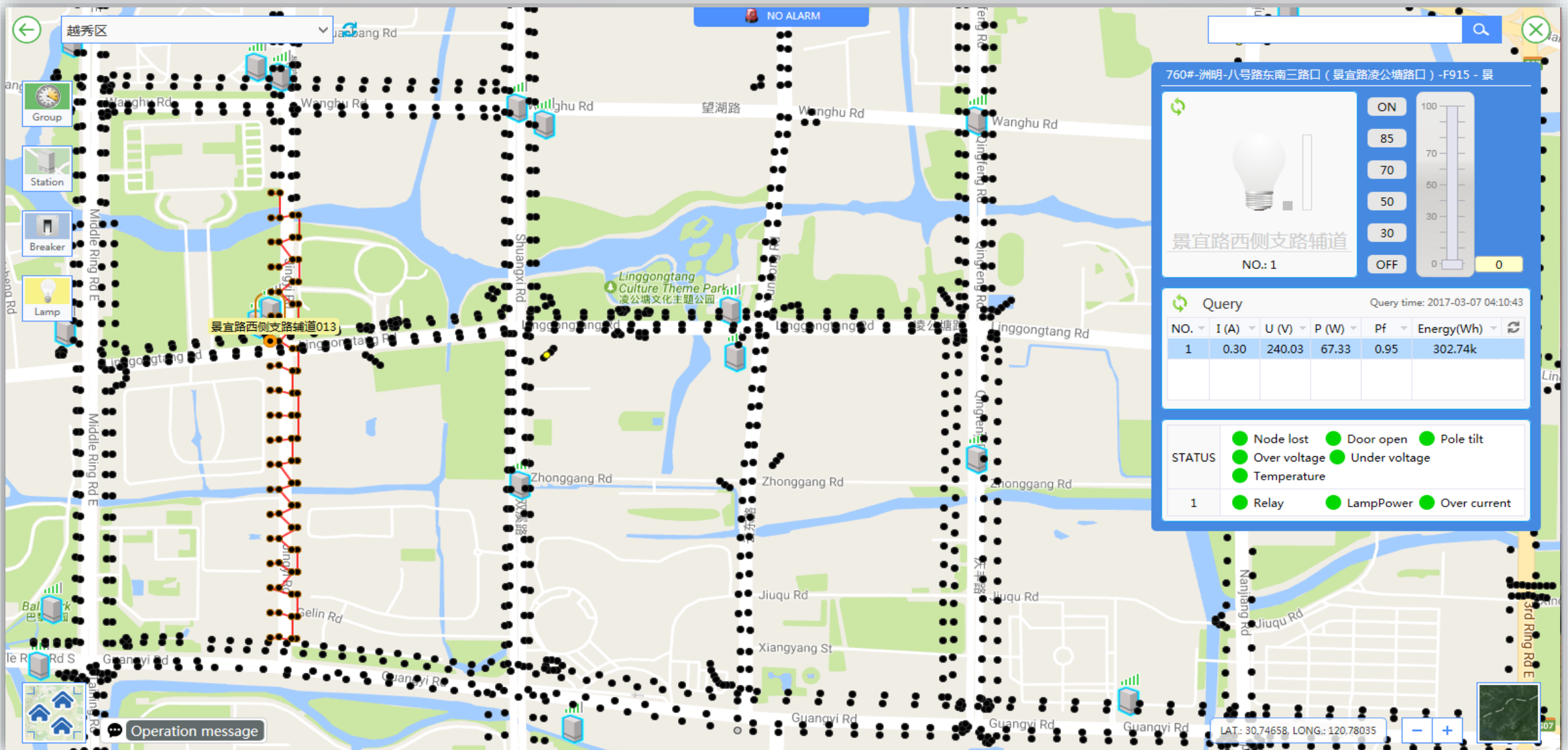
2.2 Riyadh KSA: Project View, 61,000 lamp controllers



2.2 JiaXing Project: Cabinet View, 45,000 lamp controllers



2.2 JiaXing Project: Cabinet View, 45,000 lamp controllers



2.2

PLC solution hardware devices



Parameters	FONDA-RUT200
Power supply	AC 96~500, 50~60Hz
Power consumption	2~5W
Uplink communication	GPRS/3G/4G/Ethernet
Downlink communication	PLC, 5.5K bps
Interfaces	DO X 4 DI (AC) X 2 DI (DC) X 6 RS485 X 1 USB X 2 Ethernet port X 1 Battery charging X 1 Voltage detection X 3 Current detection X 3 DC output X 1 leakage detection X 1
Working temperature	-40~85°C
Relative humidity	5%~95%
Ingress protection	IP54
Dimension(L*W*H)	288*177*95 mm
Weight	2080g

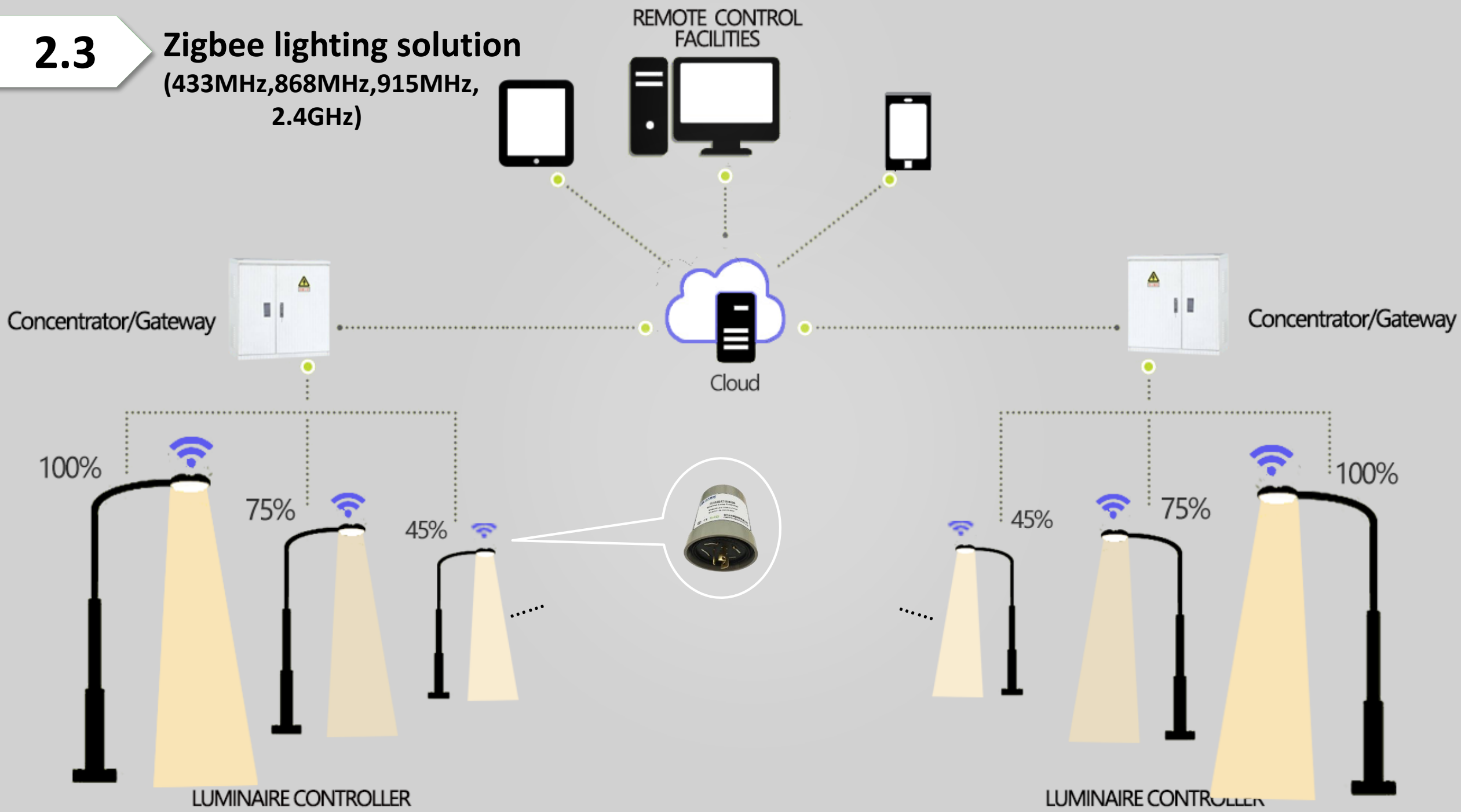


Parameters	FONDA-LCU12	FONDA-LCU22
Power supply	AC 96~264V 50~60Hz	AC 96~264V 50~60Hz
Stand-by power consumption	<2W	<2W
Max working power	≤500W	≤1000W
Communication mode	PLC	PLC
switch on/off	remote	remote
Dimming control output	PWM 0~10V/DALI	PWM 0~10V/DALI
Working temperature	-40~85°C	-40~85°C
Relative humidity	5%~95%	5%~95%
Ingress protection	IP67	IP67
Dimension(L*W*H)	172.5* 56* 40mm	116.3*63.5*63.5mm
Weight	610g	1000g

2.3

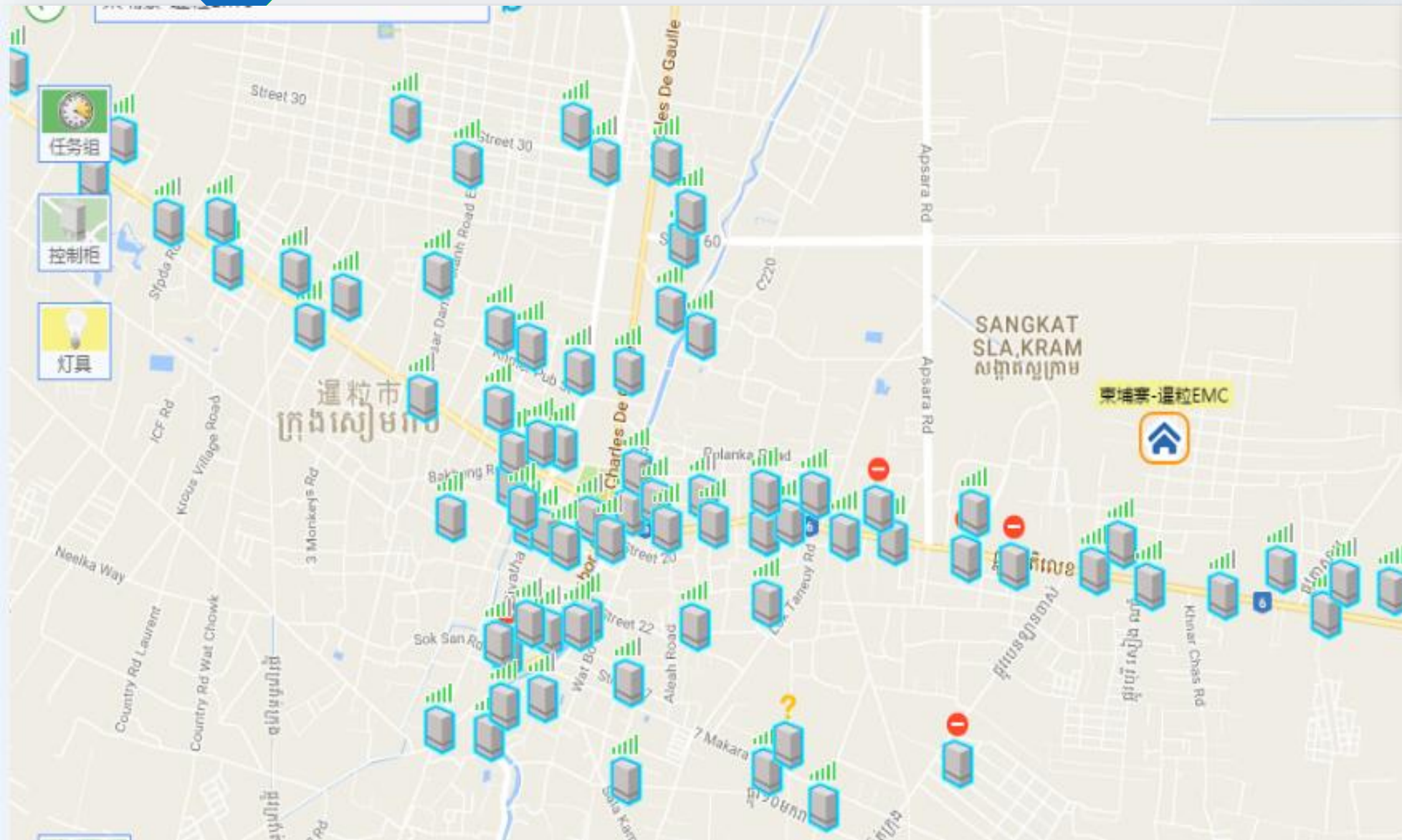
Zigbee lighting solution

(433MHz, 868MHz, 915MHz,
2.4GHz)



2.3

Zigbee project in Siem Reap Province, Cambodia



2.3

Zigbee solution hardware devices

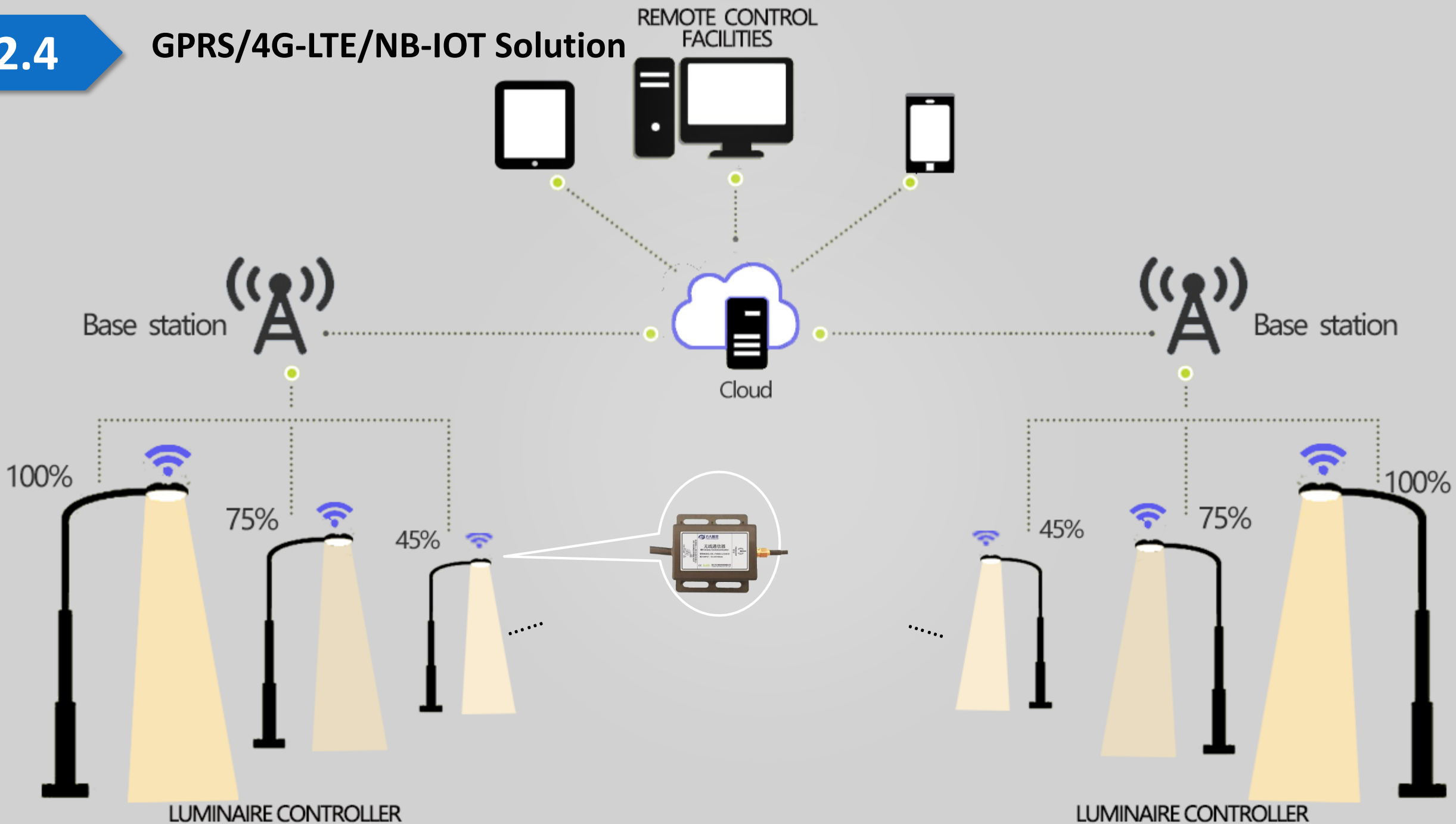


Parameters	FONDA-RUT200Z	FONDA-RUT500Z
Power supply	AC 96~500, 50~60Hz	DC 12~36V
Power consumption	2~5W	
Uplink communication	GPRS/3G/4G/Ethernet	GPRS/3G/4G/Ethernet
Downlink communication	Zigbee, 2.4GHz	Zigbee, 2.4GHz
Interfaces	DO X 4 DI (AC) X 2 DI (DC) X 6 RS485 X 1 USB X 2 Ethernet port X 1 Battery charging X 1 Voltage detection X 3 Current detection X 3 DC output X 1 leakage detection X 1	RS485 X 1
Working temperature	-40~85°C	-40~85°C
Relative humidity	5%~95%	5%~95%
Ingress protection	IP54	IP54
Dimention(L*W*H)	288*177*95 mm	155* 150* 32 mm
Weight	2080g	

Parameters	FONDA-LCU12M	FONDA-LCU12Z	FONDA-LCU16M
Power supply	AC 96~264V 50~60Hz	AC 96~264V 50~60Hz	AC 96~264V 50~60Hz
Stand-by power consumption	<2W	<2W	<2W
Max working power	≤400W	≤400W	≤400W
Communication mode	Zigbee, 915MHz	Zigbee, 2.4GHz	Zigbee, 2.4GHz
switch on/off	remote	remote	remote
Dimming control output	PWM 0~10V/DALI	PWM 0~10V/DALI	PWM 0~10V/DALI
Working temperature	-40~85°C	-40~85°C	-40~85°C
Relative humidity	5%~95%	5%~95%	5%~95%
Ingress protection	IP67	IP67	IP65, NEMAstandard
Dimension(L*W*H)	172.5* 56* 40mm	172.5* 56* 40mm	φ84mm, H98mm
Weight	610g	610g	240g

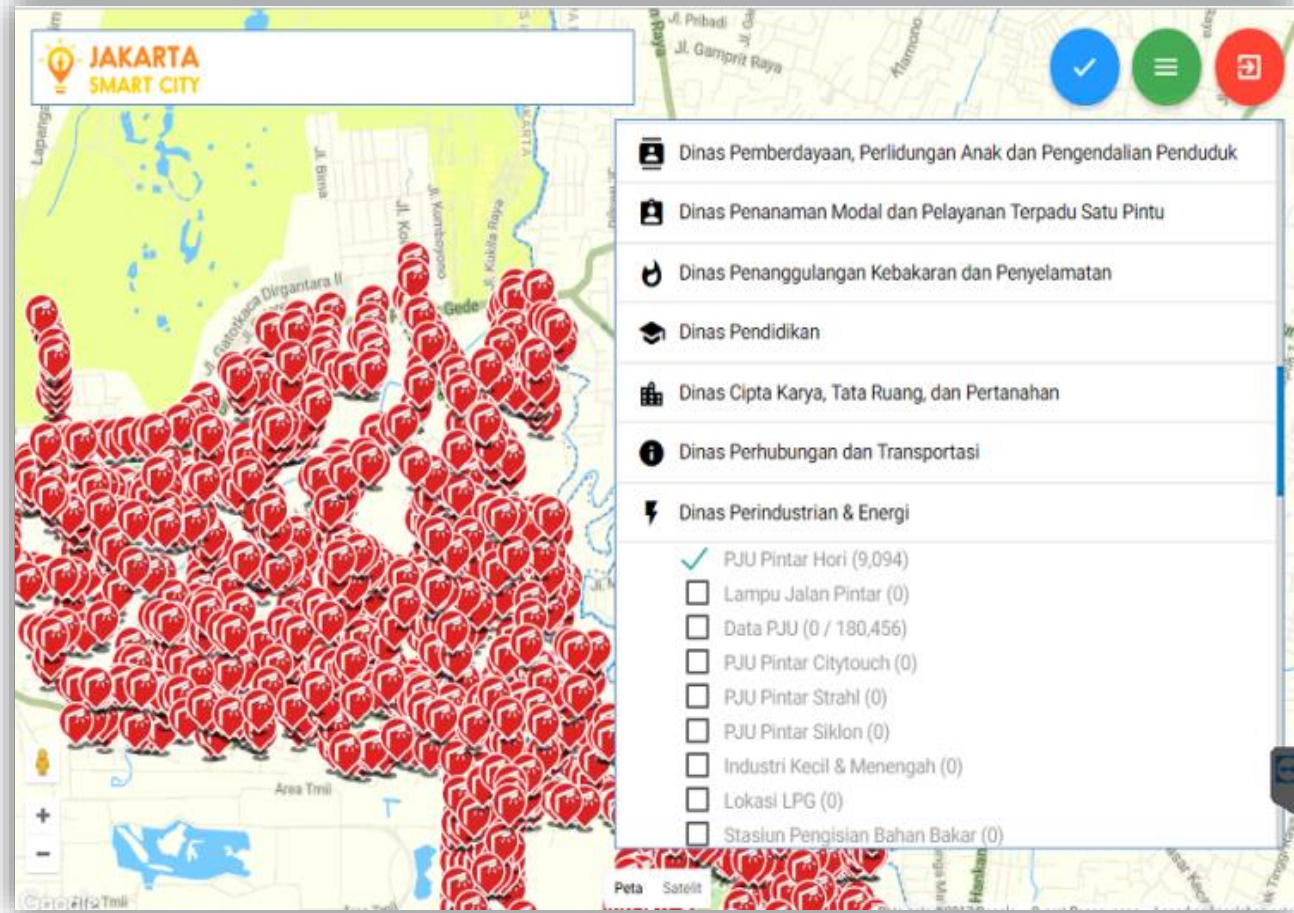
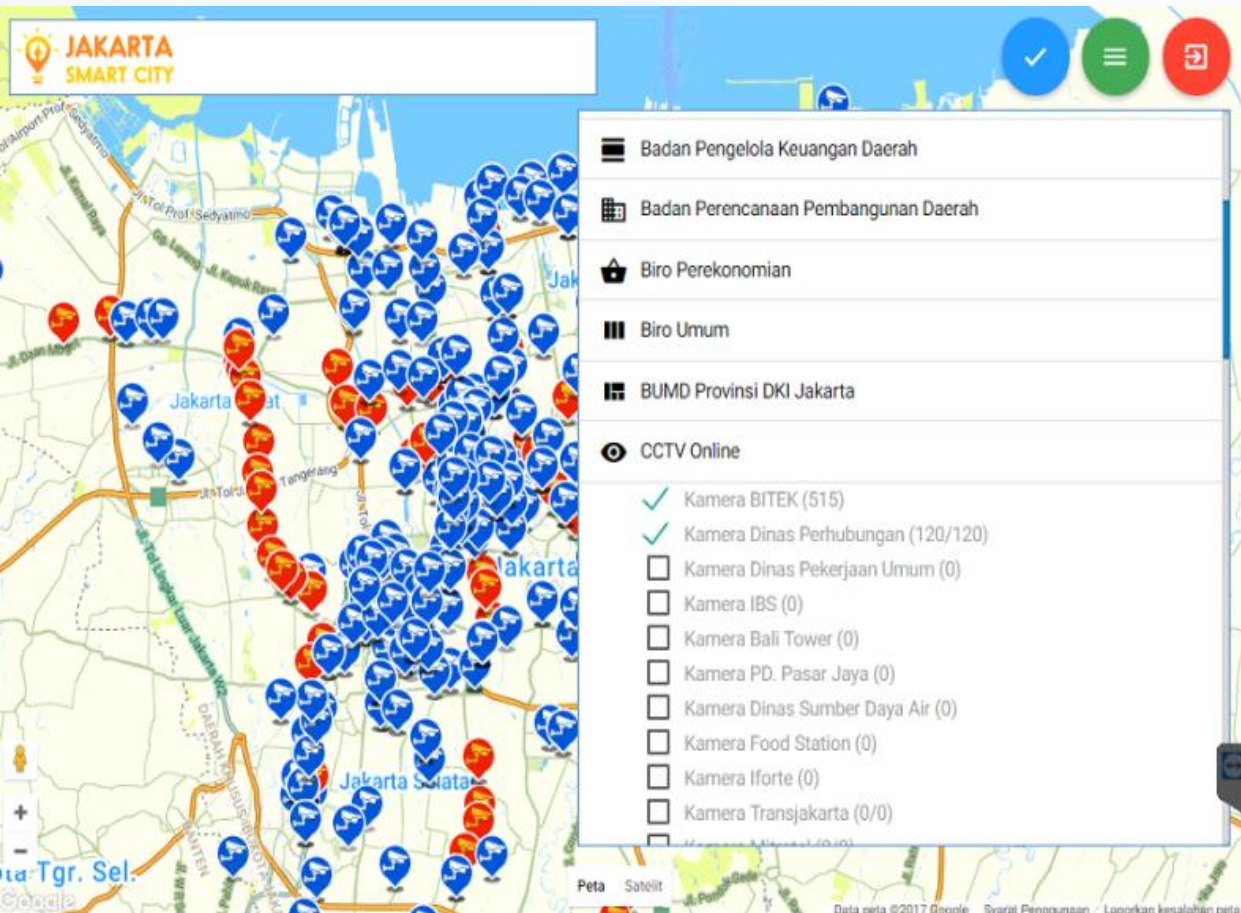
2.4

GPRS/4G-LTE/NB-IOT Solution



2.4

GPRS project in Indonesia



2.4 NB-IoT project in Hangzhou



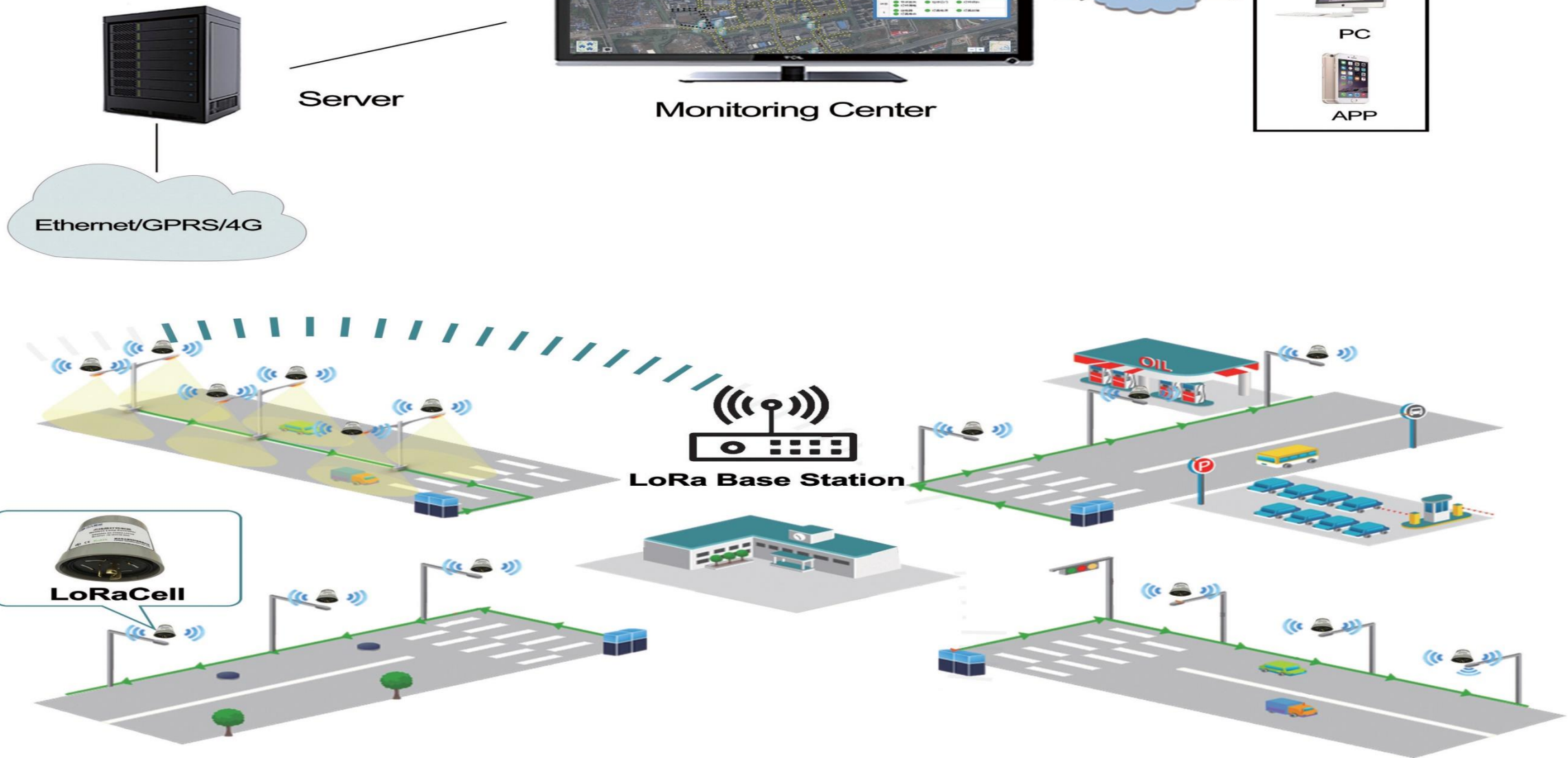
2.4

GPRS/4G/NB-IoT solution hardware devices



Parameters	FONDA-LCU51G	FONDA-LCU31G	FONDA-LCU16NB
Power supply	DC 12~24V	DC 12V	AC 96~264V 50~60Hz
Stand-by power consumption	<1W	<1W	<3W
Max working power	\	\	≤400W
Communication mode	GPRS/4G	GPRS/4G	NB-IoT
switch on/off	remote	remote	remote
Dimming control output	Digital source/ DALI optional	Digital source/ DALI optional	0~10V/ PWM, DALI optional
Working temperature	-30~75° C	-30~75° C	-40~85° C
Relative humidity	5%~95%	5%~95%	5%~95%
Ingress protection	IP67	IP65	IP65
Dimension(L*W*H)	65*60*32 mm	φ 81*51.5 mm	φ 84*98 mm
Weight	120g	100g	240g

2.5 LoRa Solution



2.5

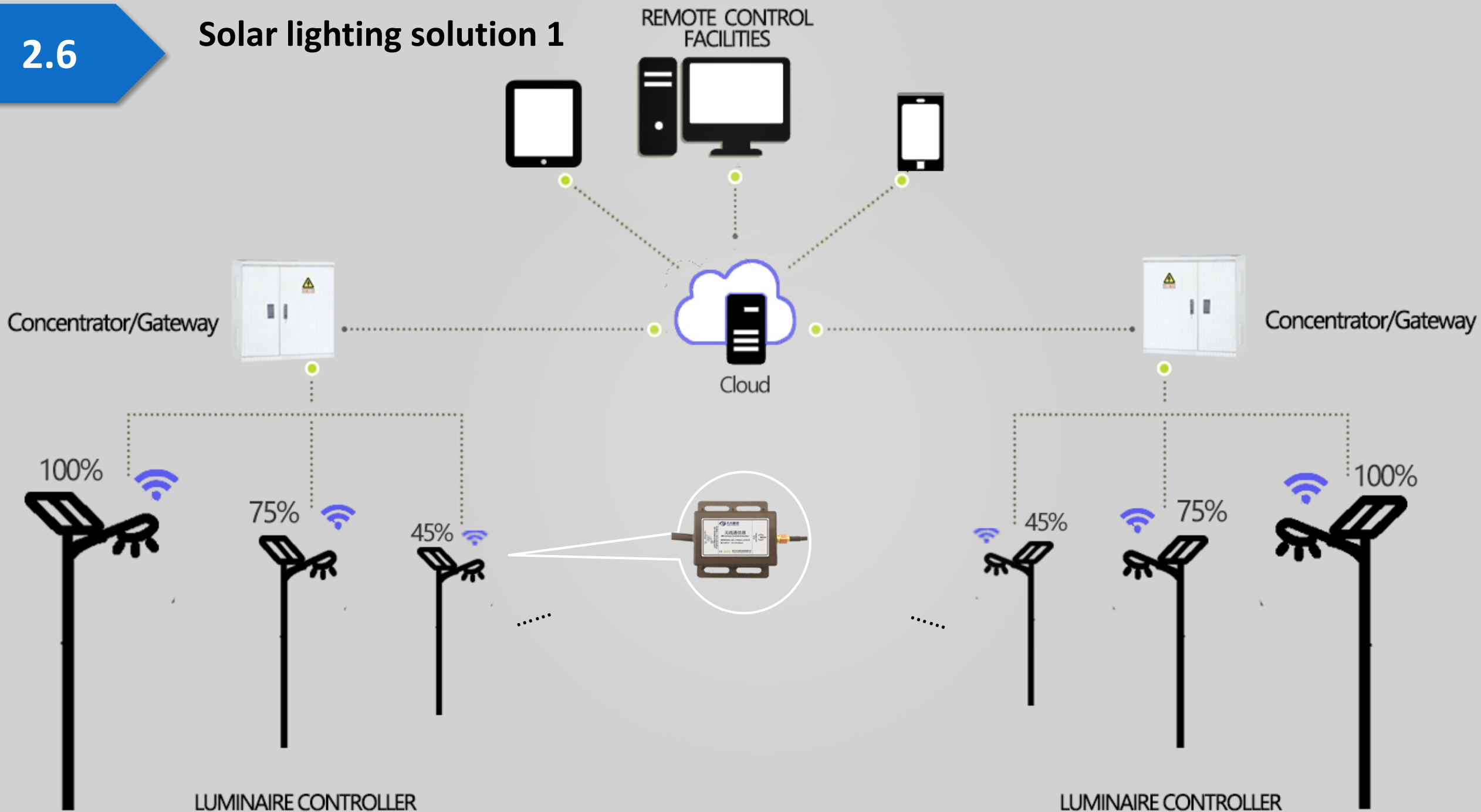
LoRa solution hardware devices



Parameters	FONDA-RTU500LORA	Parameters	FONDA-LCU12LORA	FONDA-LCU16LORA
Power supply	DC 12V	Power supply	AC 96~264V 50~60Hz	AC 96~264V 50~60Hz
Power consumption		Stand-by power consumption	<2W	<2W
Uplink communication	4G/Ethernet/wifi	Max working power	≤400W	≤400W
Downlink communication	LORA 470MHz/868MHz/915MHz	Communication mode	LoRaWAN	LoRaWAN
Interfaces	Ethernet WiFi	switch on/off	remote	remote
		Dimming control output	0~10V, PWM/ DALI optional	0~10V/ PWM, DALI optional
Working temperature	-30~80° C	Working temperature	-40~85° C	-40~85° C
Relative humidity	5%~95%	Relative humidity	5%~95%	5%~95%
Ingress protection	IP65	Ingress protection	IP67	IP65
Dimession(L*W*H)	160*110*76 mm	Dimension(L*W*H)	172.5* 56* 40mm	φ 84*98 mm
Weight		Weight	610g	240g

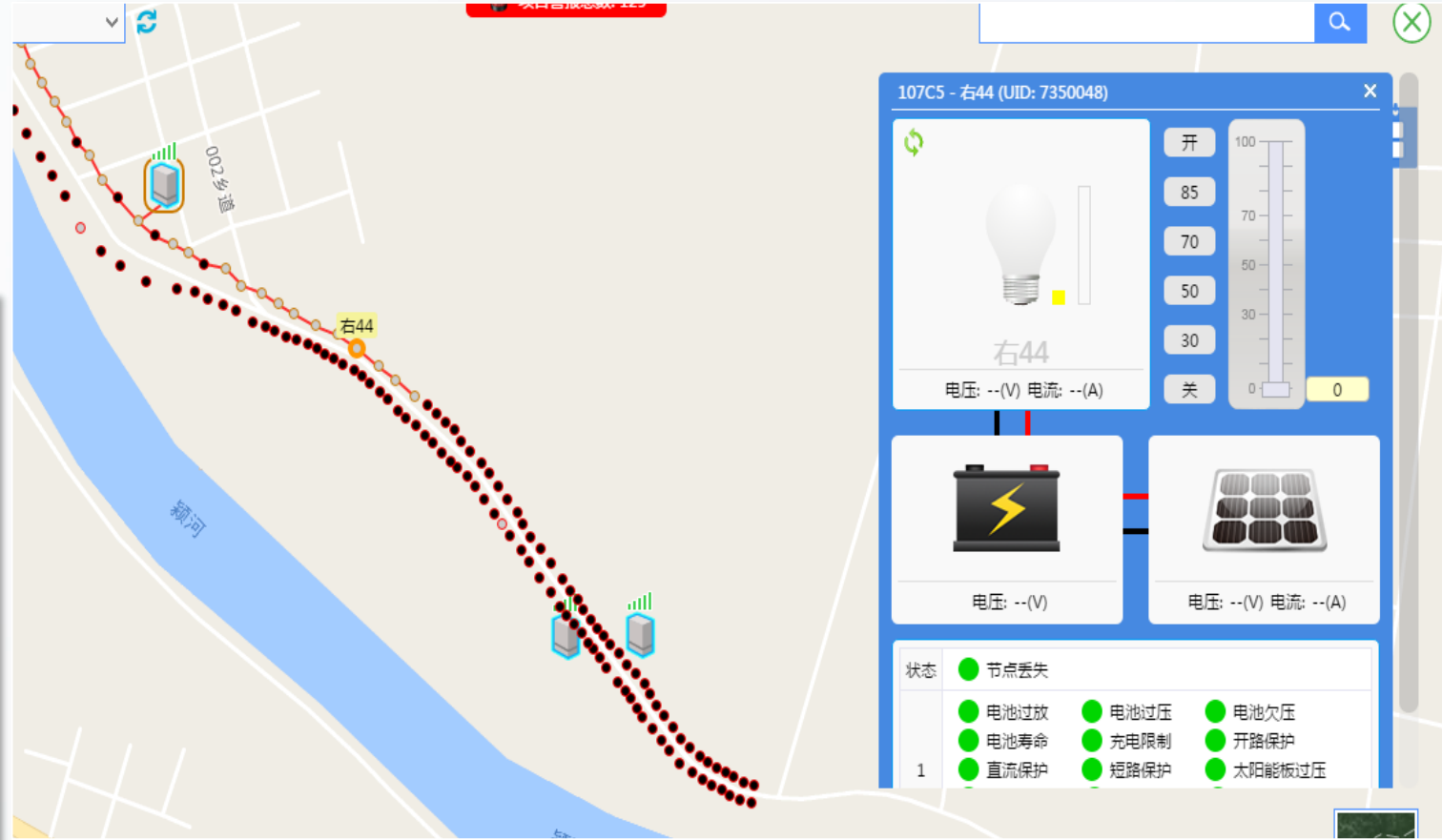
2.6

Solar lighting solution 1



2.6

Solar Lighting control remotely project in Henan



2.6

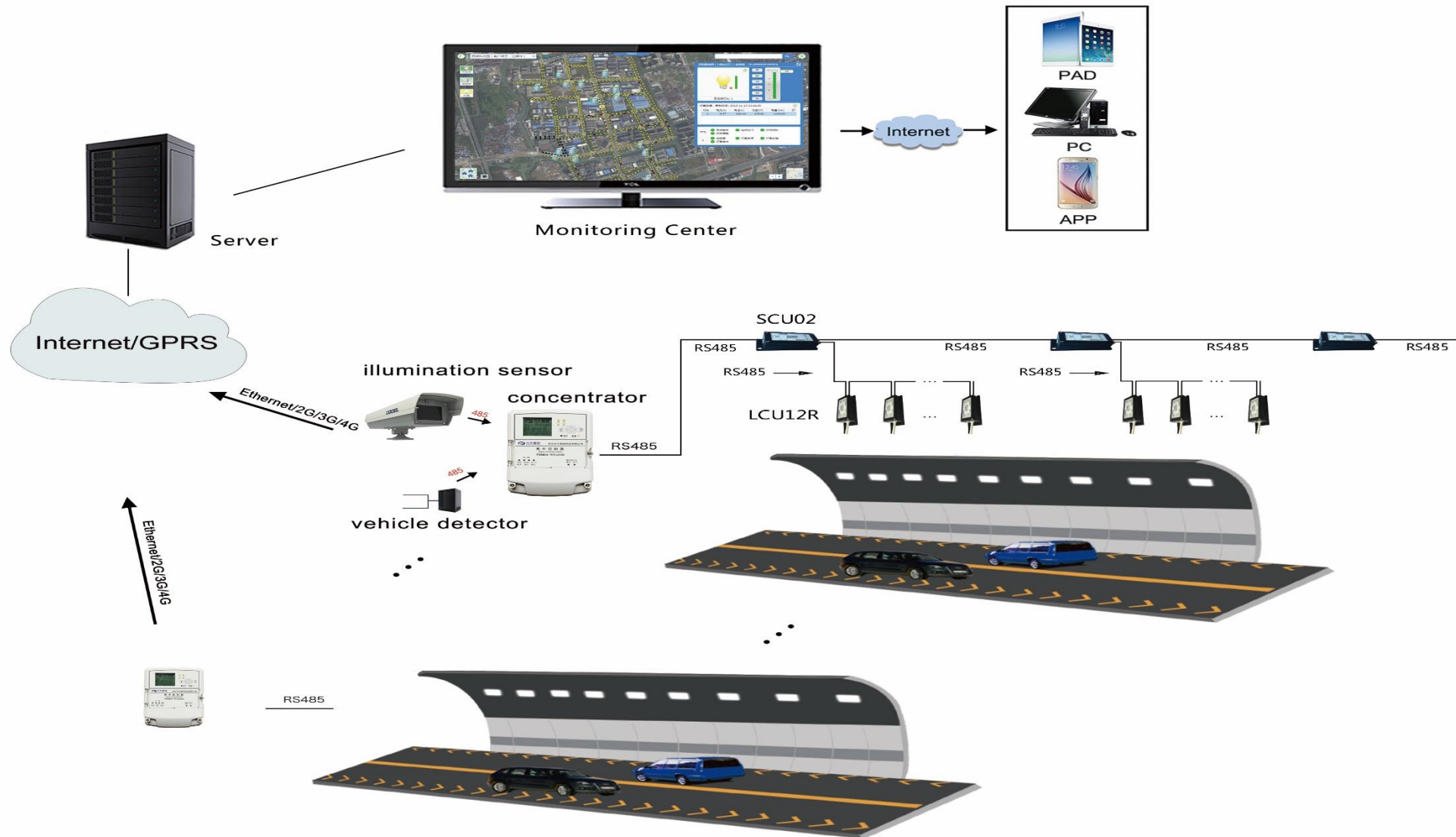
Solar lighting solution hardware devices



Parameters	FONDA-RUT500Z
Power supply	DC 12~36V
Power consumption	
Uplink communication	GPRS/3G/4G/Ethernet
Downlink communication	Zigbee, 2.4GHz
Interfaces	RS485 X 1
Working temperature	-40~85°C
Relative humidity	5%~95%
Ingress protection	IP54
Dimention(L*W*H)	155* 150* 32 mm
Weight	



Parameters	FONDA-LCU51ZS	FONDA-LCU51GS
Power supply	DC 12~24V	DC 12~24V
Stand-by power consumption	<1W	<1W
Max working power	\	\
Communication mode	ZIGBEE 2.4GHz	GPRS/4G
switch on/off	remote	remote
Dimming control output	Solar controller	Solar controller
Working temperature	-30~75° C	-30~75° C
Relative humidity	5%~95%	5%~95%
Ingress protection	IP67	IP67
Dimension(L*W*H)	65*60*32 mm	65*60*32 mm
Weight	120g	120g



2.7

Tunnel Lighting Solution projects in China



Items	PLC 	ZIGBEE 	GPRS 	NB-IoT 	LoRa 
Frequency band	/	470M/868M/915M/2.4G Hz	850/900/1800 MHz	800/900/1800 MHz	470/868/915 MHz
Communication distance	Node to Node;500m	Node to Node: 150m	Unlimited	15km	10-15km ideally 1-5km urban are
Communication speed	5.5-20Kbps	250 Kbps	115K bps	65 Kbps	0.2~37.5 Kbps
Advantage	Security Data comm stable No special comm cable	Auto-mesh High comm speed	Good Security Good anti-inteference Short time of accessing low power consumption low maintenance High speed of Comm	Good Security Good anti-inteference low power consumption low maintenance Wlan	Good Security Good anti-inteference low power consumption low maintenance Wlan, multi-connections Free frequency
Disadvantage	comm distance short High cost of maintenance Weakness of anti-inteference	interfered by other radio Max connections only 255 nodes Comm distance short	Data loss	High Price NB-IoT network Public Frequency	Low speed of communicationc Max connection 500-1000 node Long distance



HOME

技术部-张高夏

sign out



MONITORING SYSTEM



GIS



STREET LIGHTING



INTELLIGENT P...



TUNNEL LIGHTI...



ENVIRONMENT



LIGHTING SHOW



video control



ASSET



MAINTENANCE

PLATFORM MODULE



USER CENTER



PROJECT

MANAGEMENT SUPPORT



ENERGY



EVENT ALARM

Please select your item to begin





Data

Big data
of lighting



Asset

Asset
Management



API

Easily
integrated
With third
part's platform



Security

Security
With AES
128bits
encryption



Alarm

Alarming
System
For fast
response



Report

Reporting
For statistics
& calculating
easily



Maintenance

Maintenance
Efficient and
simple



User center

User center
With different
authorities

SCCS Platform Features

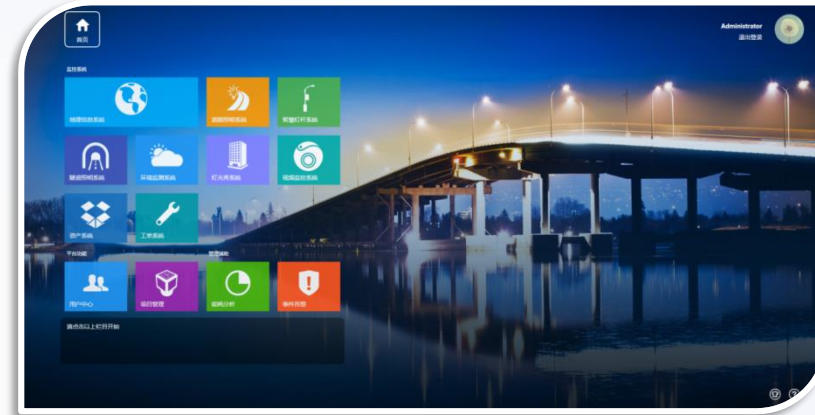


01

Modules Optional

Optional

- GIS Map
- Tunnel Lighting
- Street Lighting
- Environment Monitoring
- Facade Lighting
- Smart Pole



02

Flexibility

Seamlessly compatible with different communication technologies and protocols, supports integrations with third-party systems.

03

Scalability

Multiple layers of System security policies to ensure the software operates in a stable and secure environment. Supports different database management system, automatic data backup.

04

Security

Multiple layers of System security policies to ensure the software operates in a stable and secure environment. Supports different database management system, automatic data backup.

SCCS Platform Functions



Remote Control

- Remotely turn on/turn off/Dimming the lighting
- Support both group control and individually control

Task Scheduling

- Scheduled task executed by system automatically: Sunrise & Sunset time, manual setting...
- Automatically lighting in tough weathers (storm, snow, fog)

Energy Report

- Real time energy data query: voltage, current, power factor...
- Energy consumption by hour/day/month/year

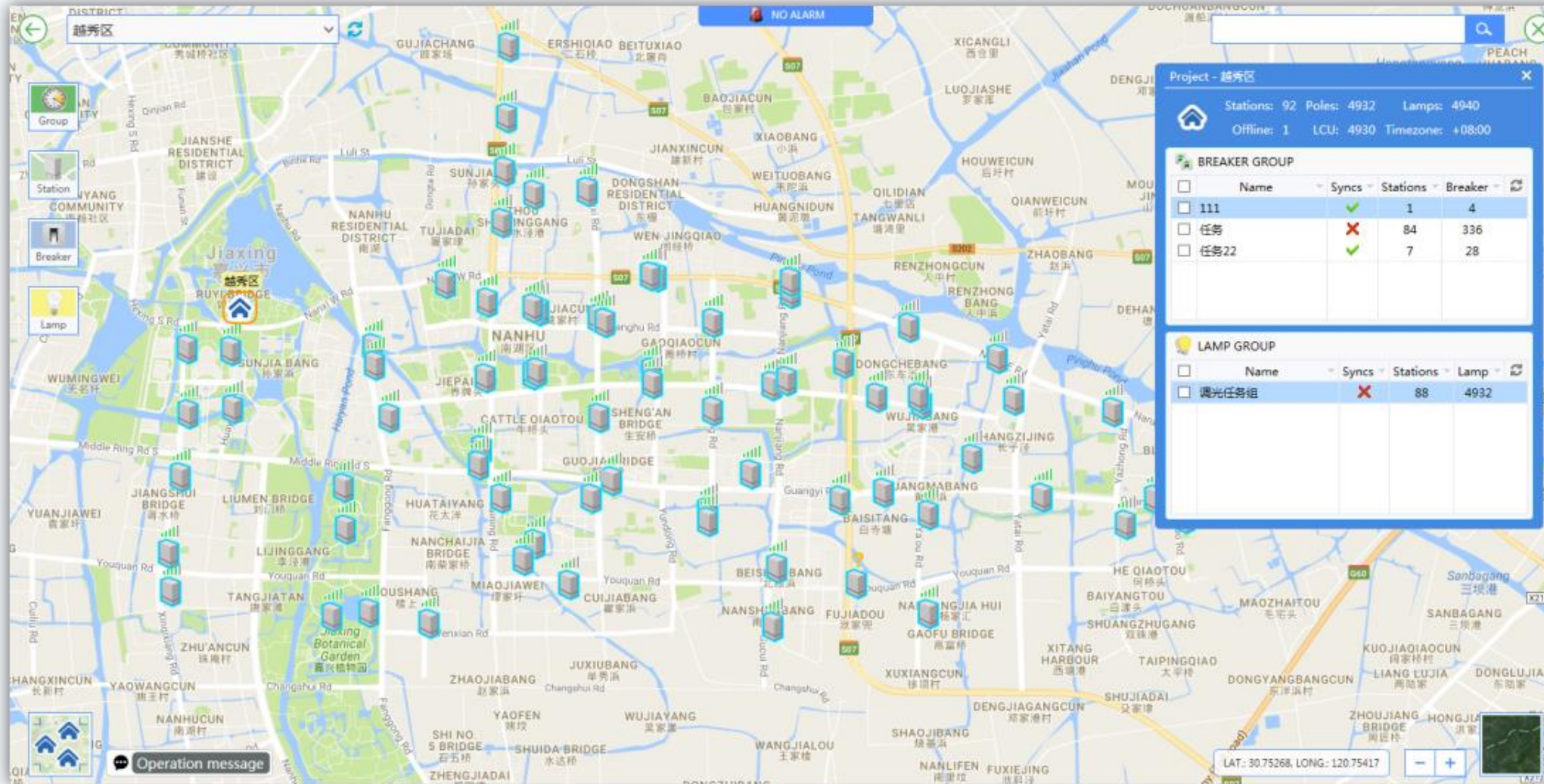
Event Alarm

- Station Level: Lighting on/off by accident, over current/voltage, cabinet tilt, door open
- Lamp Level: Lamp failure, power failure, node lost, pole tilt, over current/voltage

Assets Management

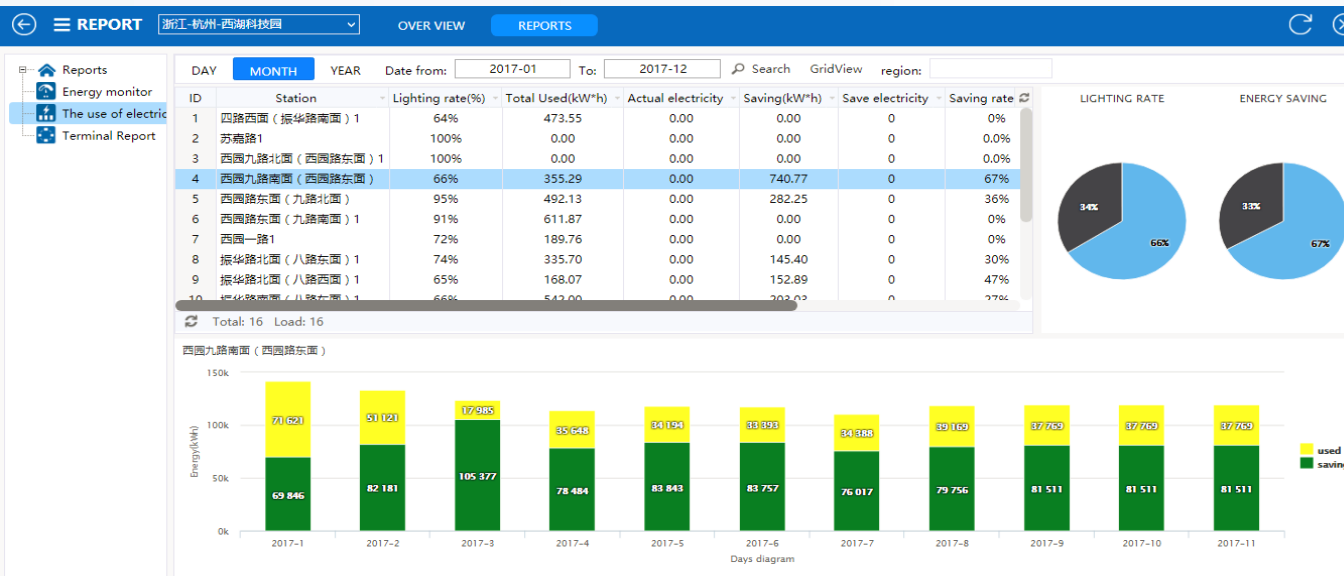
- Record the details of project assets: Lamp, Pole, Cabinet...
- Easier for maintenance arrangement

3.1 Main Operation Area In GIS system based on Google Map



- ✓ Map zoom in/out freely
- ✓ Scheduling
- ✓ Dimming
- ✓ Metering
- ✓ Monitoring
- ✓ Flexible 2D/3D viewing

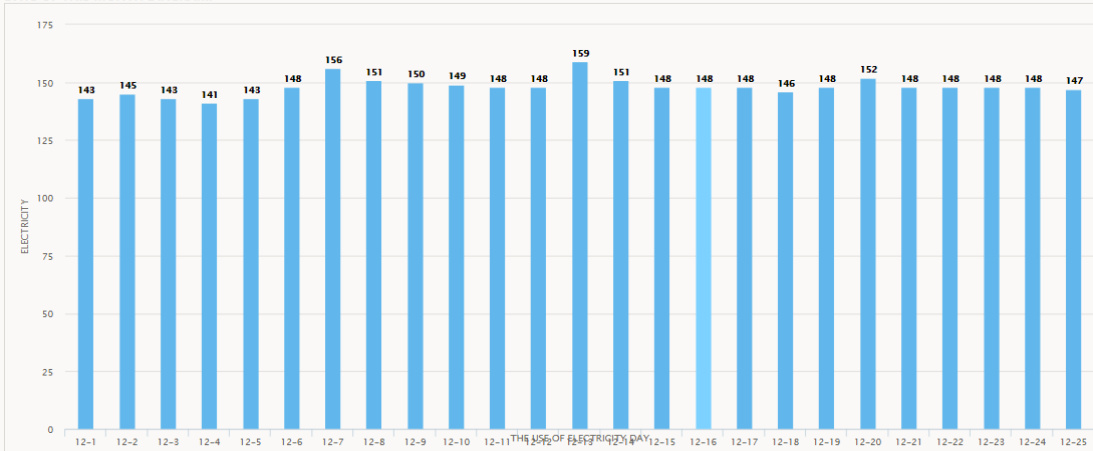
3.2 Energy reporting and statistics system



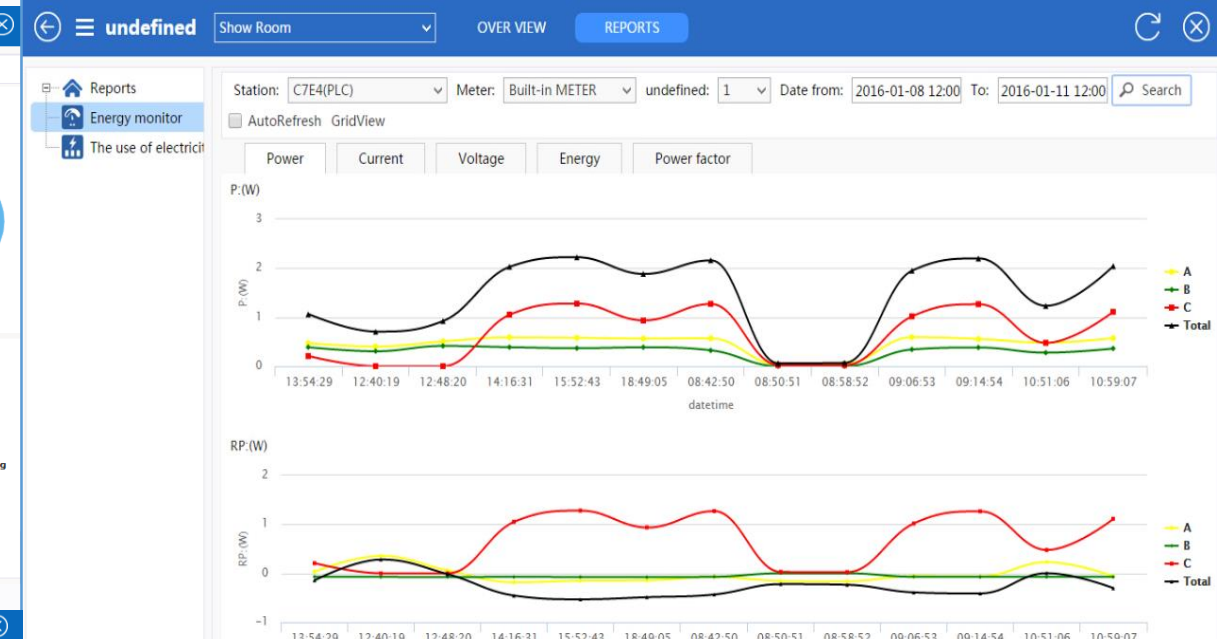
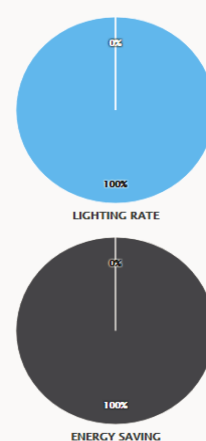
THE USE OF ELECTRICITY

59,832.508kWh 3,719.055kWh 147.840kWh
0.00 This Year 0.00 This Month 0.00 Yesterday

DAYS OF THIS MONTH DIAGRAM:



STATISTICS OF THIS MONTH



Data regarding to
Power/Voltage/Current/Energy and so on

- Day
- Month
- Year

3.3 Alarming system with automatic location



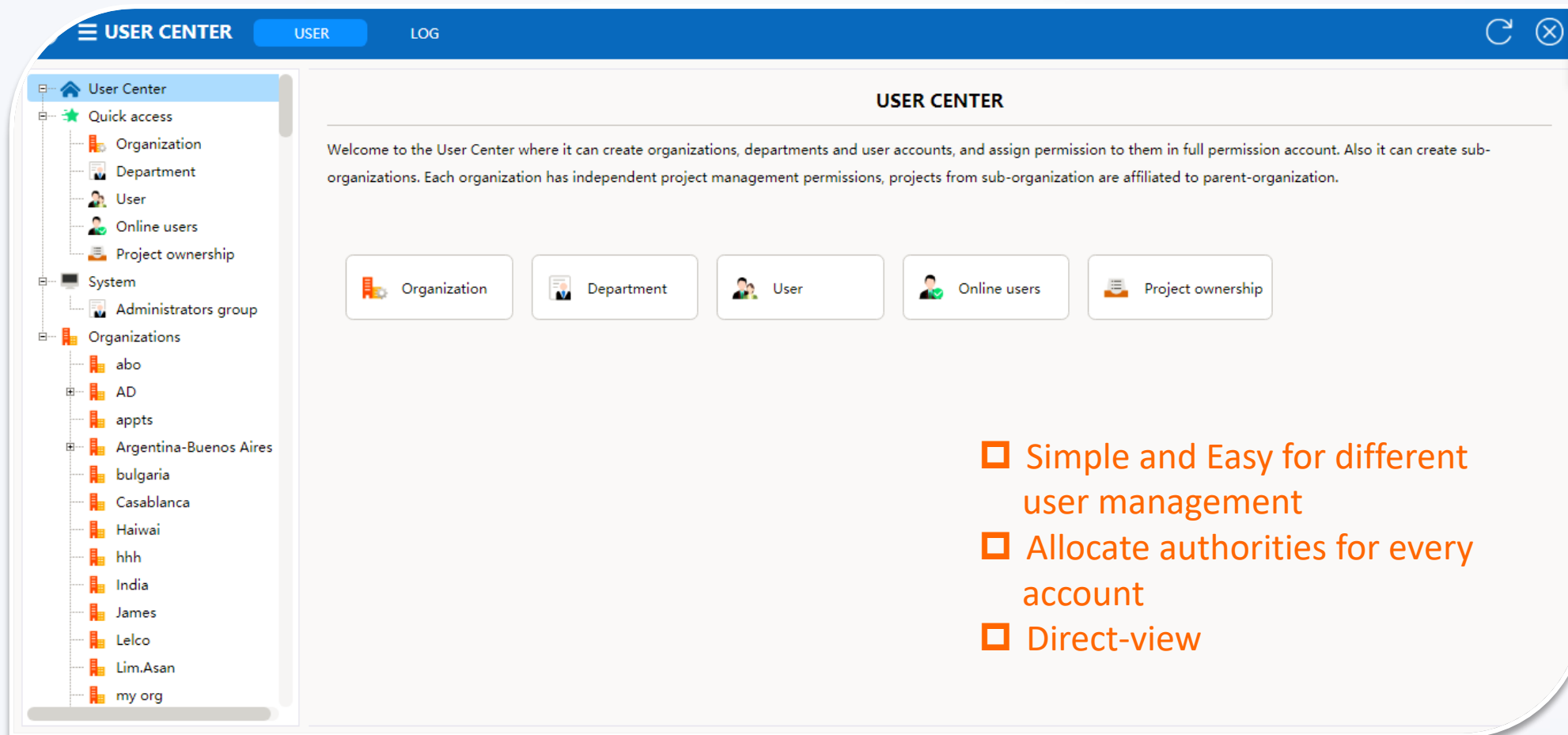
- Abundant information regarding to light alarm
- Pillar box alarming items
- Light alarming items
- One-button to position at fault device
- Direct-view of alarming information

One-button to position

The screenshot displays the ALPHA Alarming System interface, which is divided into several sections:

- Left Panel:** A sidebar with a tree view showing 'All Alarms' and a list of alarm types including 'Light-on by accident', 'Light-off by accident', 'Over current', 'Over voltage', 'Under voltage', 'Power outage', 'Phase failure', 'Earth-leakage', 'Power factor', 'Door open', 'Cabinet tilt', 'Water in cabinet', 'Lightning stroke', 'Auto-manual switch', 'External controller', 'Custom alarm', 'Conventional Lamp', 'Lamp failure', 'Power failure', 'Capacitor failure', and 'Pole leakage'.
- Top Panel:** A navigation bar with tabs for 'ALARMS', 'HISTORY', 'SETTING', and 'SYNC'. It also includes a search bar and a 'Dispatch order' button.
- Table:** A table listing all active alarms. The columns are: ID, Status, Level, Station/Area, From, Name, Type, Alarm/Clear Time, and Message. The table shows 21 entries, all with a status of 'Alarm' and a level of 'Middle'.
- Map:** A map showing the location of the alarms. A red dot indicates the location of the selected alarm. A red arrow points from the 'One-button to position' text to the map.
- Details Panel:** A panel showing the details of the selected alarm. It includes a 'Name' field, a 'Type' dropdown (set to 'Power failure'), a 'Status' dropdown (set to 'Alarm'), a 'Station/Area' dropdown (set to '振中路北面 (六路西面)'), a 'Hardware' dropdown (set to 'LCU'), a 'Pole' dropdown (set to '011'), a 'NO.' dropdown (set to '1'), a 'LCU' dropdown (set to '10EFB'), a 'Channel' dropdown (set to '1'), and a 'Data' field (set to 'P: 0.31(w), I: 0.01(A)').
- Right Panel:** A panel showing the status of the selected alarm. It includes a 'Query' button, a 'Query time' field (set to '2016-10-24 11:39:37'), a 'NO.' dropdown (set to '1'), a 'I (A)' dropdown (set to '220.50'), a 'U (V)' dropdown (set to '89.28'), a 'P (W)' dropdown (set to '1.00'), a 'Pf' dropdown (set to '43.00'), and a 'Energy(Wh)' dropdown (set to '0'). It also includes a 'STATUS' section with a list of items: 'Node lost', 'Door open', 'Pole tilt', 'Pole leakage', 'Over voltage', 'Under voltage', 'Temperature', 'Relay', 'LampPower', 'Lamp life', and 'Over current'.

3.4 User center and Peripheral sensor for environment



- ❑ Simple and Easy for different user management
- ❑ Allocate authorities for every account
- ❑ Direct-view

- Device model
- Monitoring devices
 - RTU
 - Meter
 - Breaker & detection
 - Anti-theft
 - Luxmeter
 - LCU
 - station
 - Camera
- Lighting devices
 - Pole
 - Lamp

DEVICE MODEL

station Model



RTU Model



Meter Model



Breaker & detection Model



Anti-theft Model



Luxmeter Model



LCU Model



Camera Model



LIGHTING DEVICES

Pole Model



Lamp Model



4 Smart city starts with Smart lighting Smart pole extends smart lighting covers



Smart City Concept



- Waste sensors and waste management is applied
- Information boards (transport advertising) are integrated
- Road proximity, occupancy, parking sensors are applied and integrated
- Irrigation and weather sensors are also part of the ecosystem
- Data from solar panels becomes part of the city management platform

- Benefits:**
- Energy consumption reduction
 - CO2 reduction
 - Citizen safety
 - Living quality

4.1

FONDA Smart pole deployed in Ningbo city, Shenyang city



Shenyang

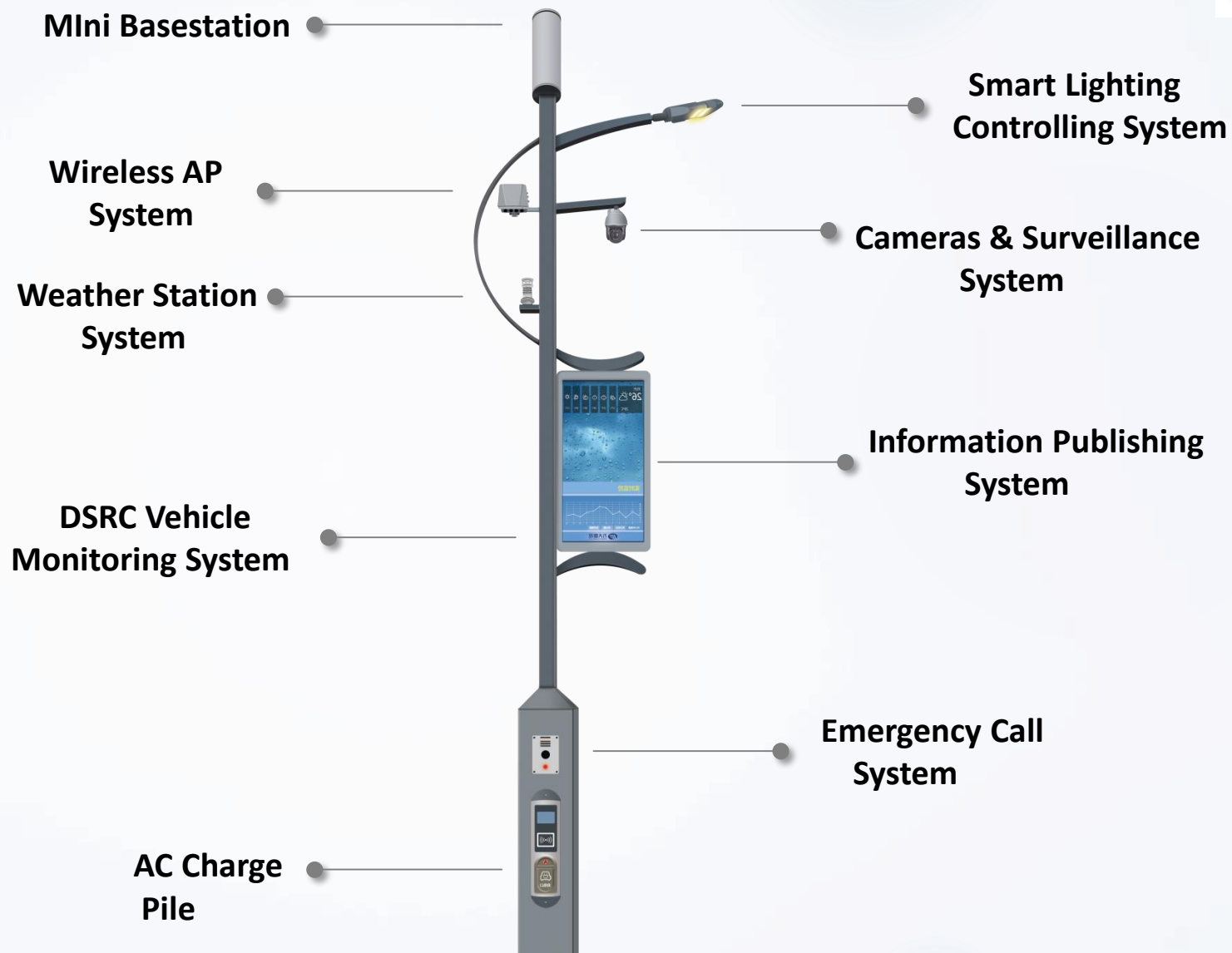
4.2

FONDA Smart pole with each function Module



Modules:

- MIni Basestation
- Smart Lighting Controlling
- Information Publishing
- Cameras & Surveillance
- Emergency call
- Weather station
- DSRC Vehicle Monitoring
- Access point (AP)
- EV charge station



4.3

Smart pole module in SCCS platform



INTELLIGENT POLE 云南-昆明-智慧灯杆 OVERVIEW HARDWARE DEPLOYMENT COMMISSIONING DEVICE MODEL SYNC

云南-昆明-智慧灯杆

Quick access

- Lamp
- Charging
- Screen
- Camera
- Sensor
- Wifi

昆明

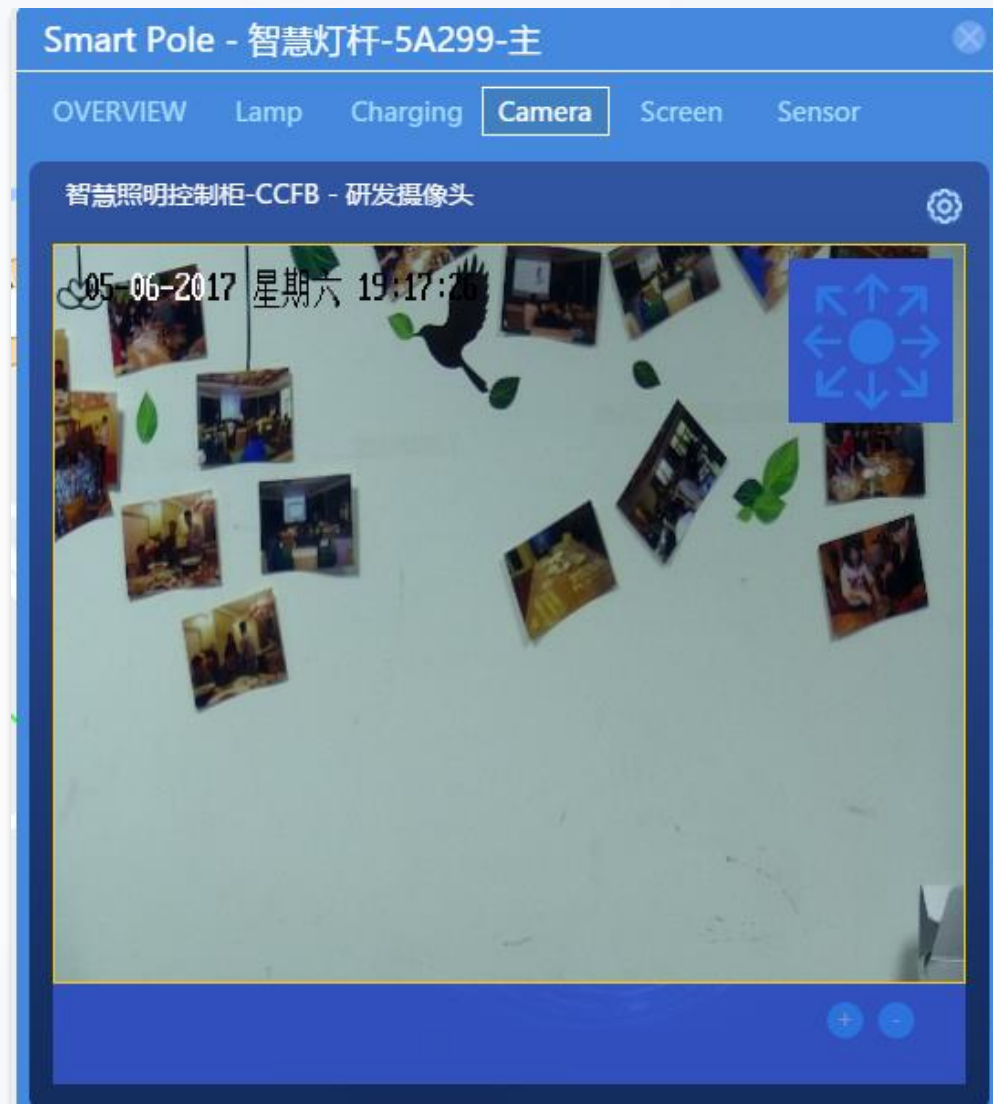
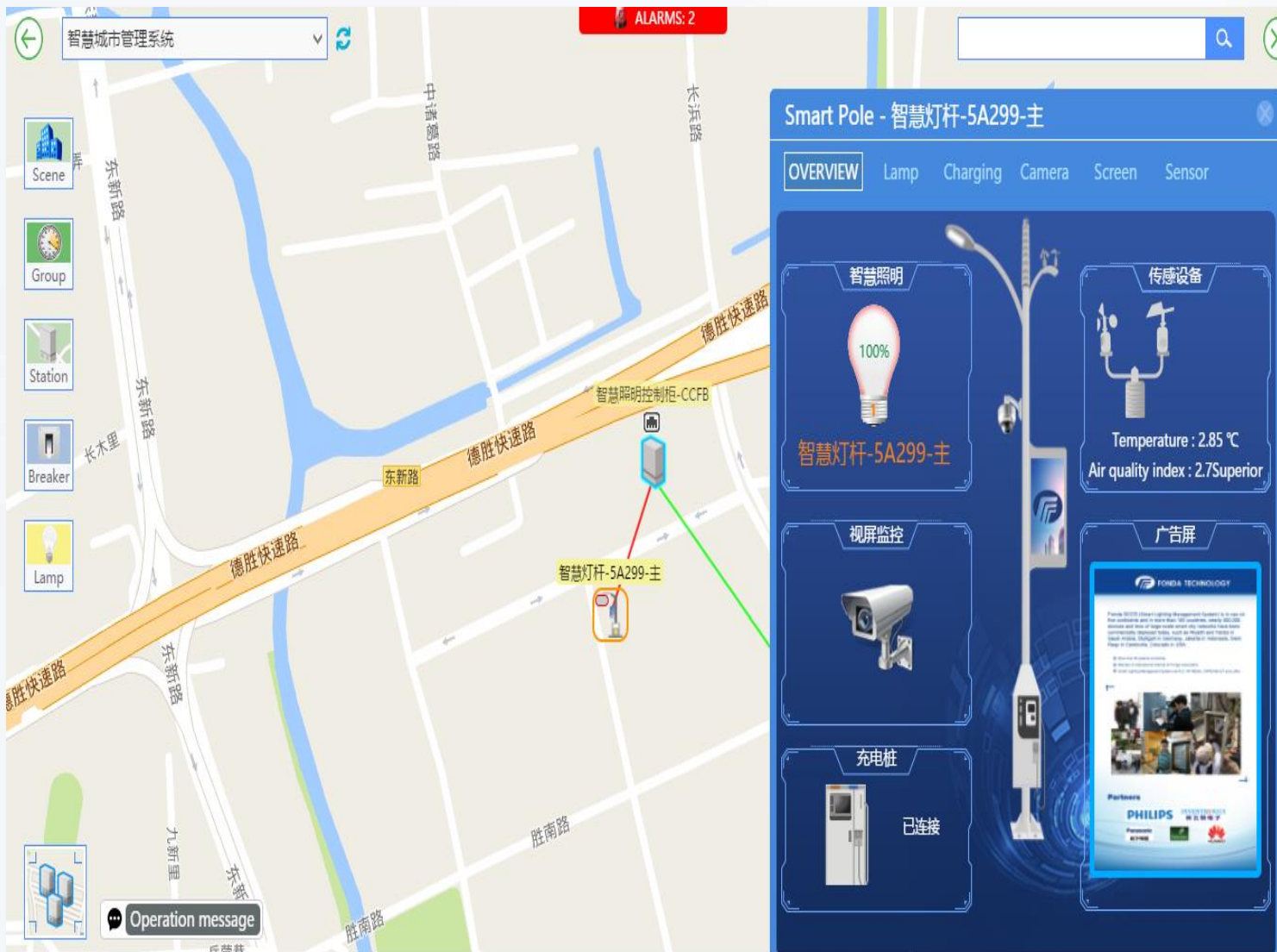
101001

云南-昆明-智慧灯杆

Device	Counts	Alarms
Pole	1	0
Lamp	4	0
Charging	0	0
Screen	0	0
Camera	1	0
Sensor	0	0
Wifi	0	0

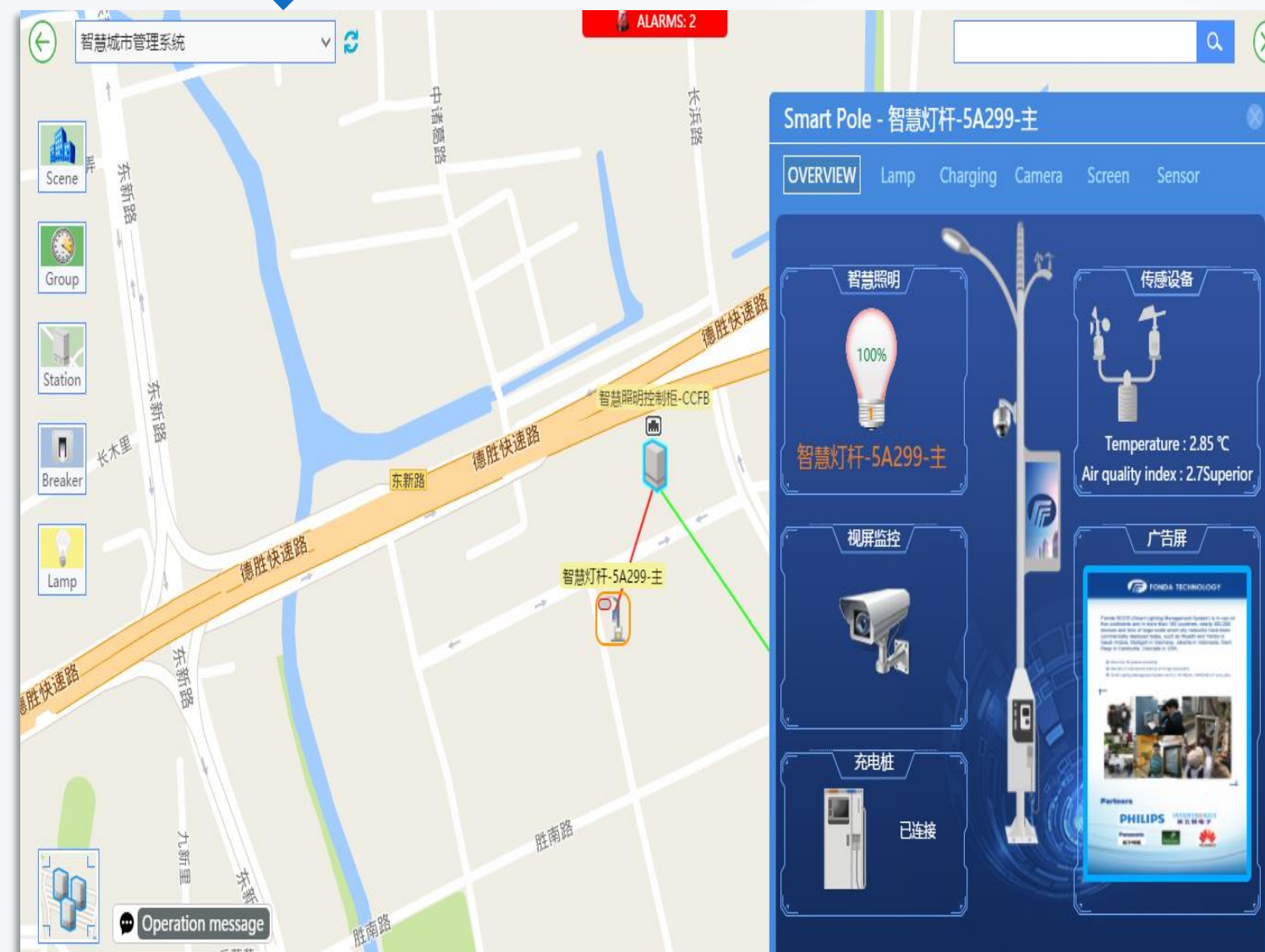
4.3

Smart pole module in SCCS platform



4.3

Smart pole module in SCCS platform





Thanks for your time!