

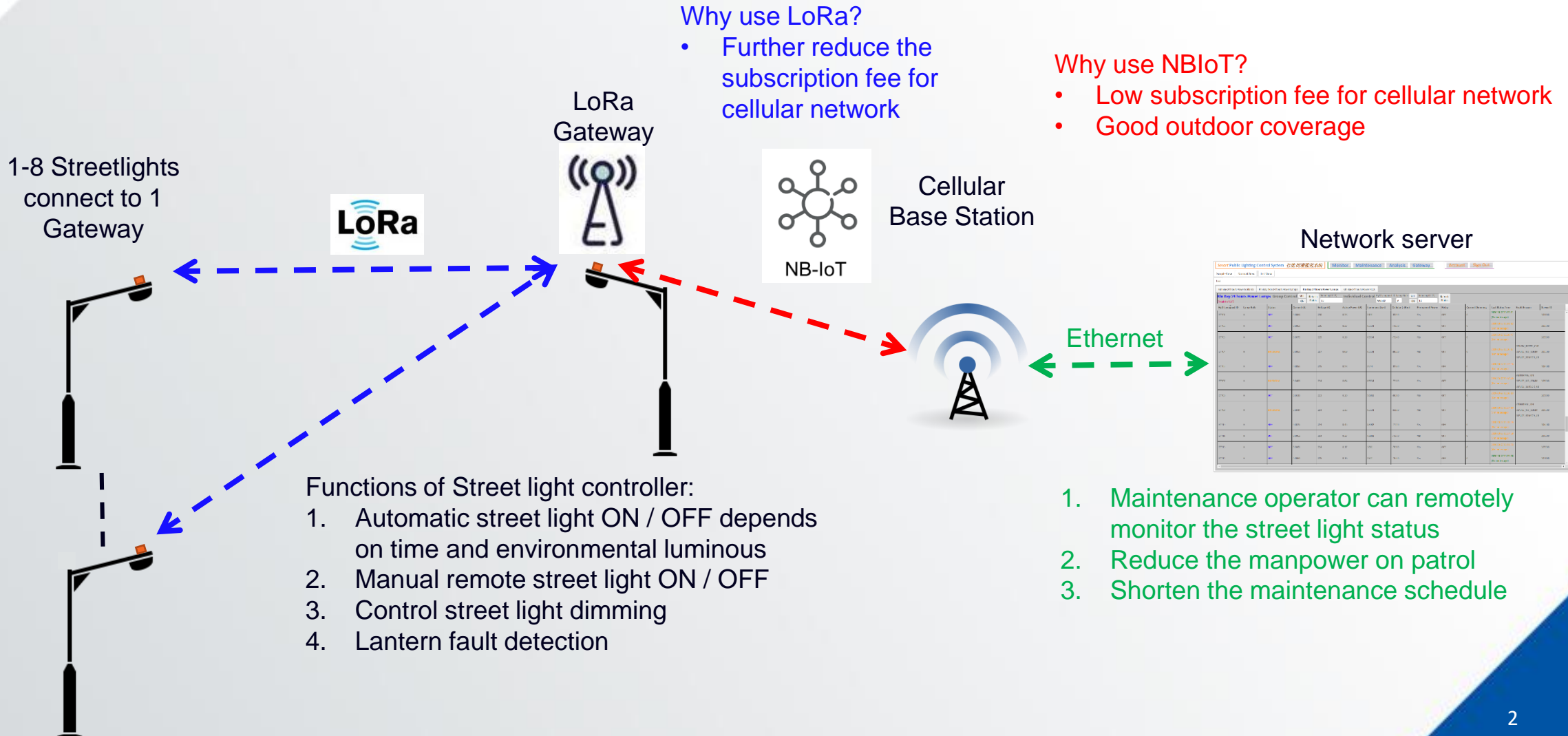


Smart Management System for Street Lighting

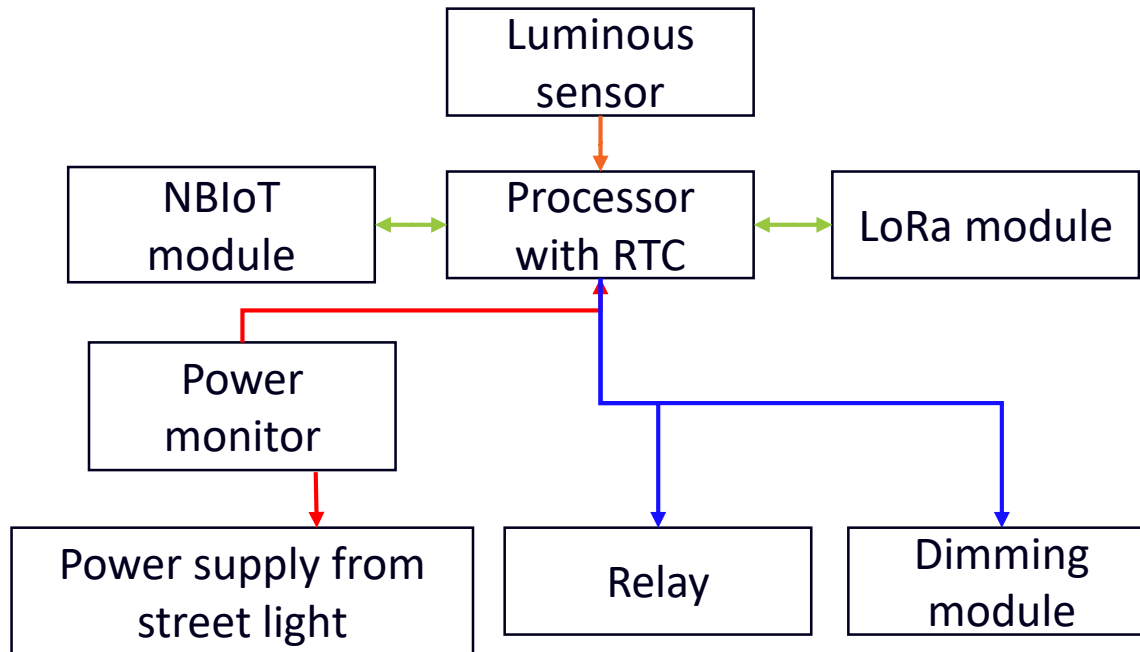
HKPC TechDive - Smart City
3-11-2020

Introduction

System Layout



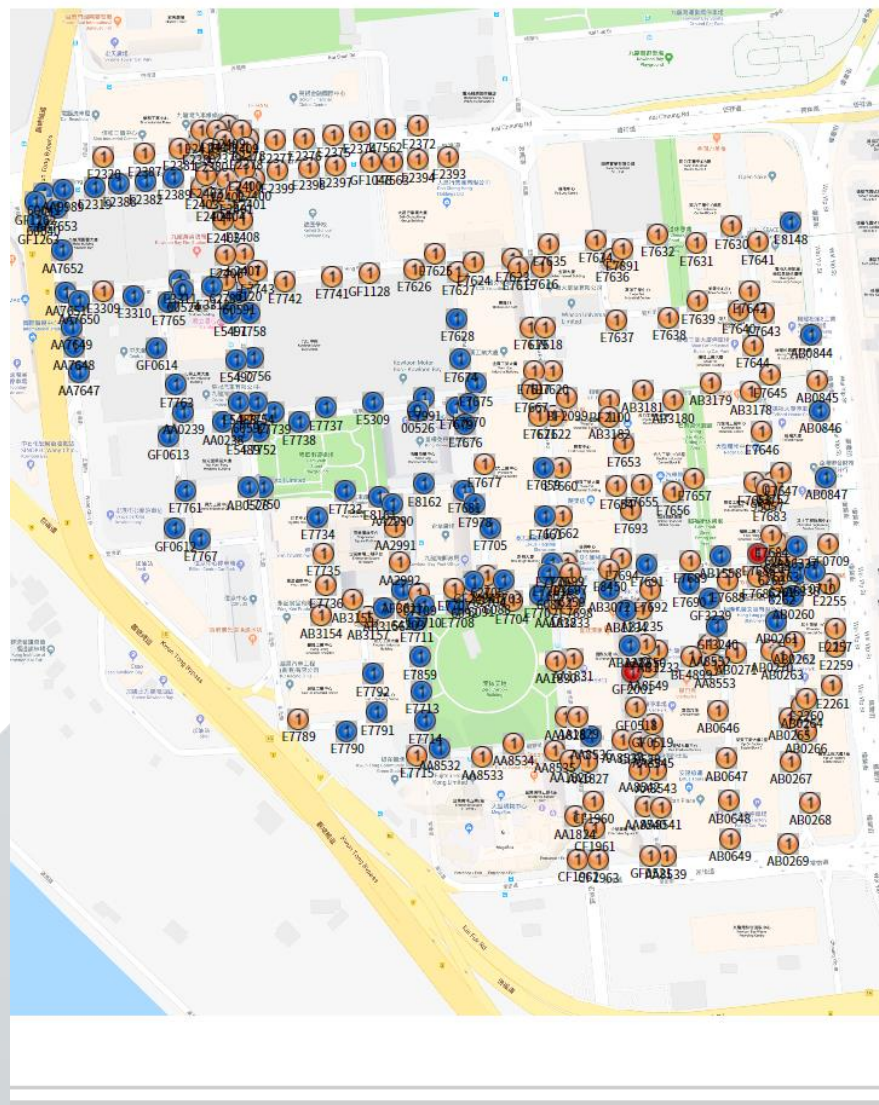
Street light controller overview



PCB of the street light controller

Casing of the street light controller





Trial Site

310 street lights controllers have been installed at Kowloon Bay

Server UI – List view

Control street light On / Off

Smart Public Lighting Control System 智能街燈監控系統

Monitor Maintenance Analysis Gateway

Account Sign Out

Simple View Normal View List View

List

Kln Bay 24 hours Power Bollards Kln Bay Non 24 hours Power Lamps Kln Bay 24 hours Power Lamps Kln Bay 24 hours Power PLCC

Kln Bay 24 hours Power Lamps (Total: 0 of 137)

Group Control OFF Refresh Dimming (1-12) ON Status 12

Individual Control HyD Lamppost ID Lamp Bulb OFF Dimming (1-12) Refresh Status AA8532 A ON 12

HyD Lamppost ID	Lamp Bulb	Status	Current (A)	Voltage (V)	Active Power (W)	Luminous (Lux)	Cellular (-dBm)	Permanent Power	Relay	Current Dimming	Last Status Time	Fault Reason	Device ID
ET701	A	OFF	0.0064	230	0.23	3191	-83.90	Yes	OFF	0	2020-10-27 11:22:11 (3 minutes ago)		105100
ET702	A	OFF	0.0063	226	0.27	65534	-73.30	Yes	OFF	0	2020-10-27 11:21:12 (3 minutes ago)		105000
ET703	A	OFF	0.0075	225	0.29	65534	-73.40	Yes	OFF	0	2020-10-27 11:16:47 (8 minutes ago)		105600
ET704	A	NO SIGNAL	0.0056	227	0.09	65534	-80.20	Yes	OFF	0	2020-10-27 11:16:17 (8 minutes ago)	BELOW_RATED_CUR; DEVICE_NO_COMM DEVICE_SENSOR_AB	105500
ET705	A	OFF	0.0055	225	0.23	3244	-82.80	Yes	OFF	0	2020-10-27 11:17:03 (8 minutes ago)		108600
ET707	A	NO SIGNAL	0.0408	224	0.64	65534	-72.10	Yes	OFF	0	2020-10-27 11:18:49 (6 minutes ago)	ABNORMAL_ON DEVICE_NO_COMM DEVICE_SENSOR_AB	105800
ET708	A	OFF	0.0039	223	0.20	58982	-80.60	Yes	OFF	0	2020-10-27 11:18:13 (6 minutes ago)		105700
ET709	A	NO SIGNAL	0.0944	224	1.35	65534	-64.80	Yes	OFF	0	2020-10-27 11:17:19 (7 minutes ago)	ABNORMAL_ON DEVICE_NO_COMM DEVICE_SENSOR_AB	106600
ET710	A	OFF	0.0075	224	0.45	58982	-77.40	Yes	OFF	0	2020-10-27 11:15:59 (9 minutes ago)		106500
ET711	A	OFF	0.0062	224	0.27	58982	-72.70	Yes	OFF	0	2020-10-27 11:17:29 (7 minutes ago)		106700
ET713	A	OFF	0.0061	224	0.17	2861	-76.60	Yes	OFF	0	2020-10-27 11:21:03 (4 minutes ago)		107000
ET714	A	OFF	0.0060	225	0.16	3741	-76.00	Yes	OFF	0	2020-10-27 11:22:10 (3 minutes ago)		107100

STATUS

MAP

SCHEDULER

1. Display electrical parameters of each street light
2. Display fault reason
3. Control individual street light On / Off
4. Control group street lights On / Off
5. Refresh individual street light status
6. Refresh group street lights status

Server UI – Map view

Street light status

Green: Normal On

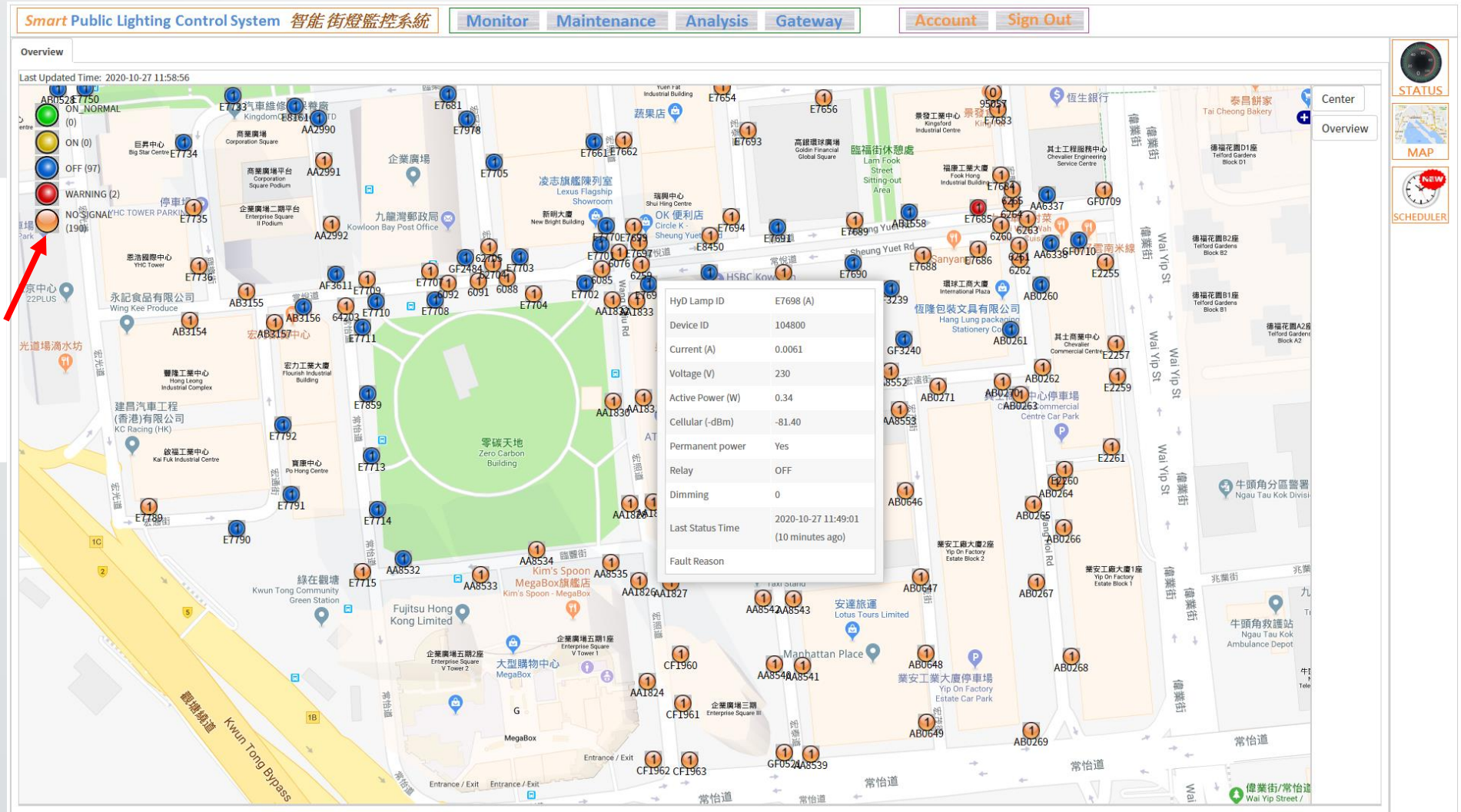
Yellow: Triggered On

Red: Fault

Blue: Off

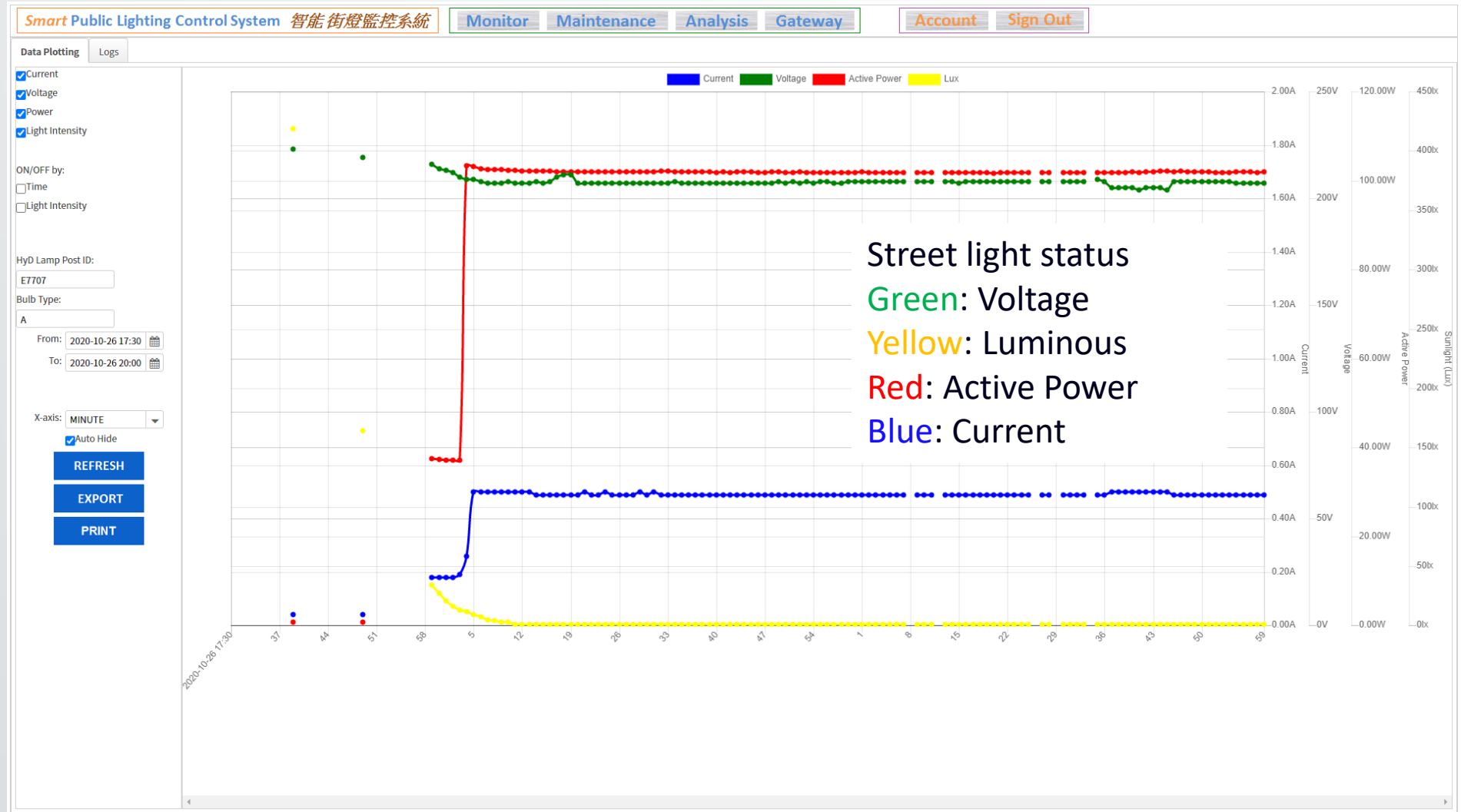
Orange: Disconnected

1. Display a big picture of street lights status within district
2. Check individual street light status

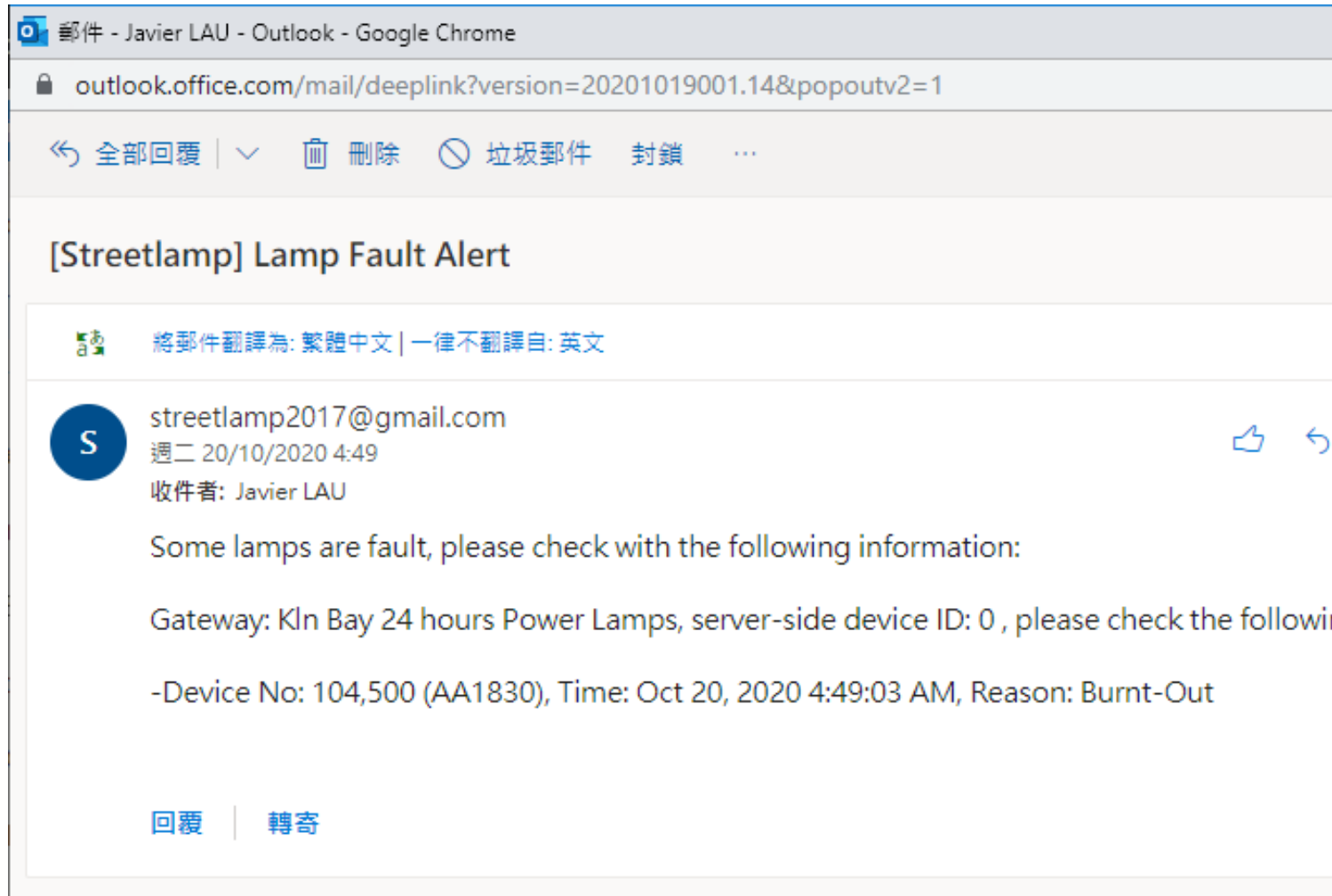


Server UI – Analysis

1. Analysis individual street light historical data
2. Download the historical data from database



Server UI Email alert



1. Email alert maintenance operator when street light has fault

2. Fault type:

- i. Burnt-out
- ii. Over current
- iii. Below current
- iv. Voltage abnormal
- v. Abnormal On
- vi. Controller fault
- vii. No communication



Hong Kong Productivity Council
香港生產力促進局

HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong
香港九龍達之路78號生產力大樓
+852 2788 5678 www.hkpc.org