



Sylvania  
**Connected**  
Solutions

A WORLD OF SMARTS *for the city*

By Christian Mildner, August 2019

# Introduction - Sylvania Connected Solutions (SCS)

***“Our goal is to help Clients convert strategic objectives into deliverable solutions with tangible outcomes”***

- SCS is an part of Sylvania Lighting and the Gerard Group (GLG), an Australian company with 650 employees and leader in the street lighting market.
- Solutions provider and systems integrator for smart cities projects, including networked smart lighting systems.
- Leverages a global network of leading technology vendors, which is continuously evolving in line with customer needs and industry best practice.
- SCS can design, install, operate and maintain solutions “as-a-Service” (Networks, Software, Platforms).



# Why adopt Smart Street Lighting



## Enhanced Controls

- Replace crude controls e.g. timers, photocells with flexible individual switching with dimming



## Save Energy, reduce Emissions

- Dimming
- Trimming (precise switching times and reducing excess light)
- Constant Light Output
- Accurate metering



## Asset Management

- See faults in real-time
- Manage component lifecycles
- Precisely manage all assets



## Public Safety and Comfort

- Program street lights for safer environment - reduces crime, improves road safety
- Emergency response



## Return on Investment

- Adding controls as part of LED program can improve the overall business case



## Platform for IoT Connectivity

- Add other sensors and smart city infrastructure applications like smart parking & traffic monitoring

# Council Example

- Controls system installed as part of V-category street lighting upgrade.
  - Constant light output, trimming & dimming.
  - Utility uses the system for network monitoring and asset maintenance.
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- Project cost went up by 25%
  - Energy savings increased by 30%.
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- SCS worked with the utility, council & consultants to:
    - ✓ Develop the project agreement.
    - ✓ Develop a new installation and maintenance process.
    - ✓ Develop CLO, trimming and dimming strategies.

# Beyond smart lighting controls

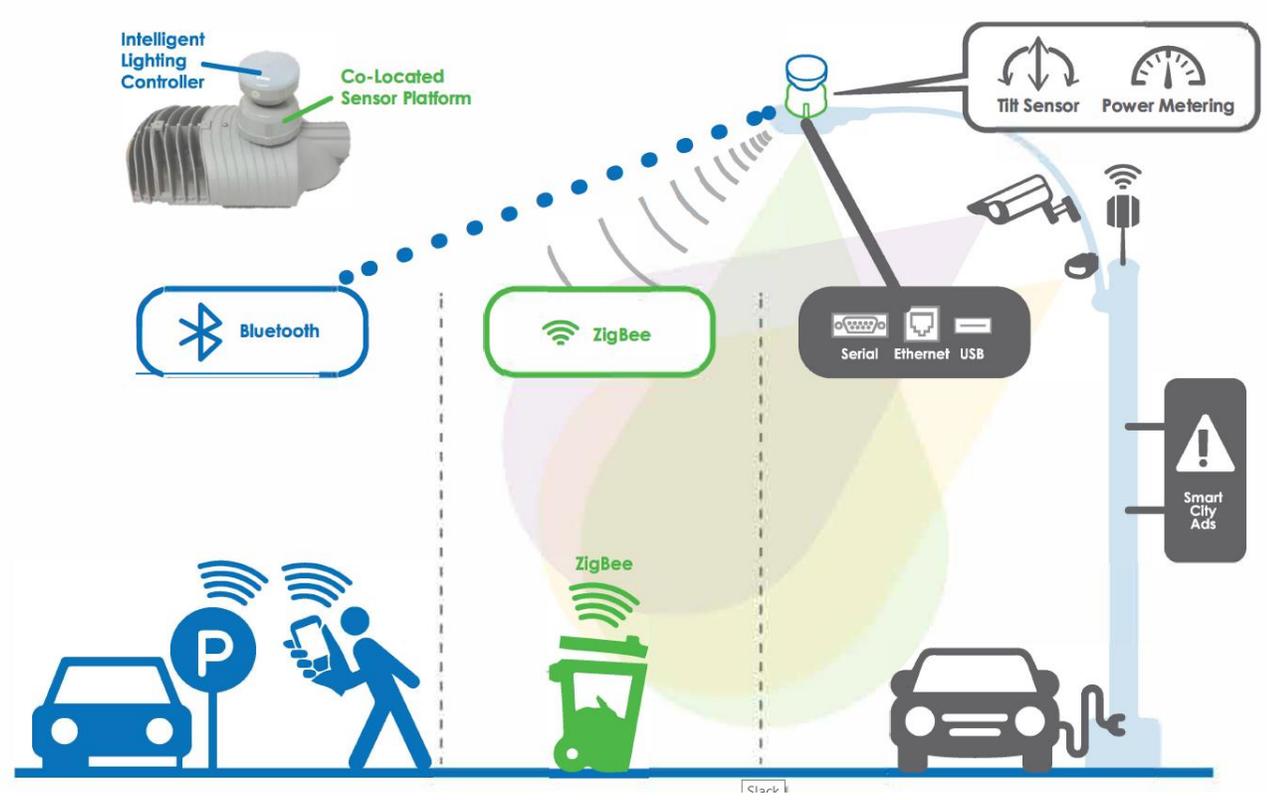
Use data from smart lighting controllers for new use cases:

- Voltage for network monitoring?
  - Pilots underway with several utilities.
- Temperature correlation for heat mapping?
  - Pilot underway with several councils.
- Lux levels correlation with solar radiation?
  - In planning with multiple councils.
- Power, current, energy, power factor, frequency, burning Hours?
  - New use cases as they emerge.



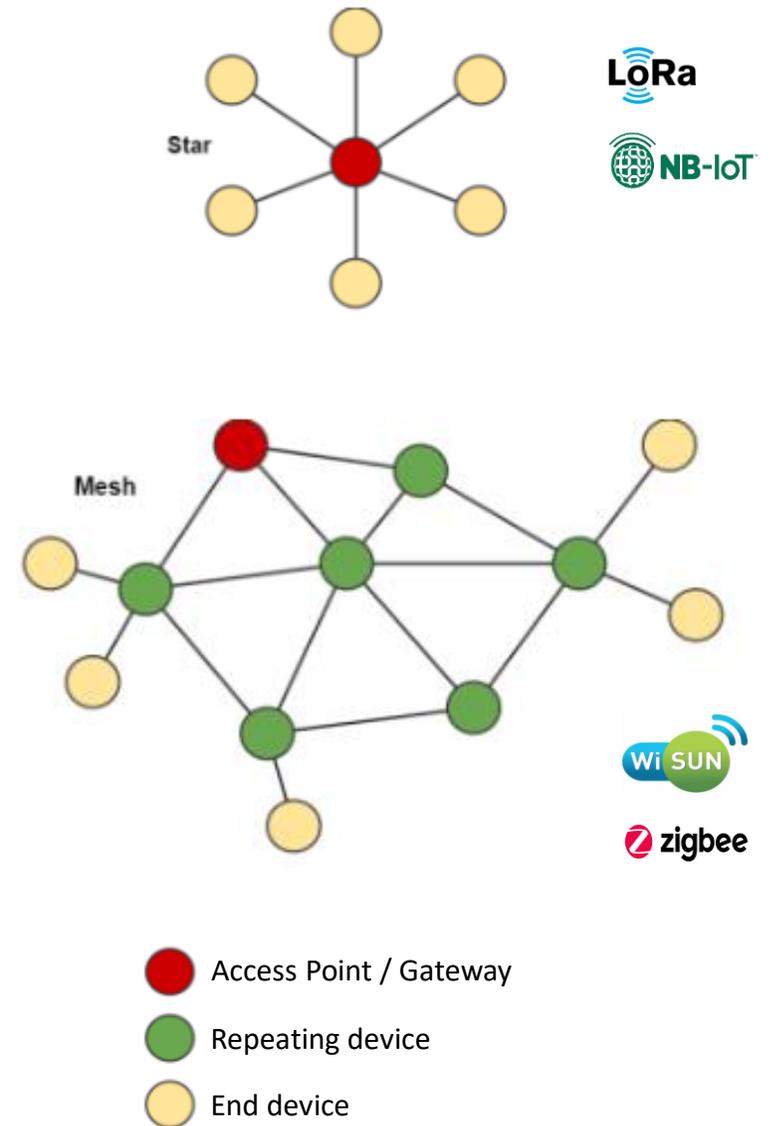
# Street lights as a sensor platform

- Street lights are ubiquitously spread across city areas.
- Power available.
- Suitable mounting locations for many sensors.
- Sensor hubs powered through NEMA receptacles on street lights:
  - ✓ Edge computing power.
  - ✓ Connects 3<sup>rd</sup> party sensors.
  - ✓ Plug and play installation.
  - ✓ Connect to any data analytics tools or Central Management System.



# Street lights as a network canopy

- Connected street lights can create a network canopy to connect more sensors and devices.
- Mesh vs star topologies -> **street lights great enabler for mesh networks.**
- Mesh networks allow for communication of devices in the field:
  - ✓ Self-coordination and -orchestration of devices.
  - ✓ Real time communication for critical use cases.
  - ✓ Secure and resilient -> works without backhaul.
  - ✓ Pushes the smarts to the network edge -> reduces data volumes and central processing power.
  - ✓ Ever smarter devices will enable ever smarter networks at the edge.



LoRa

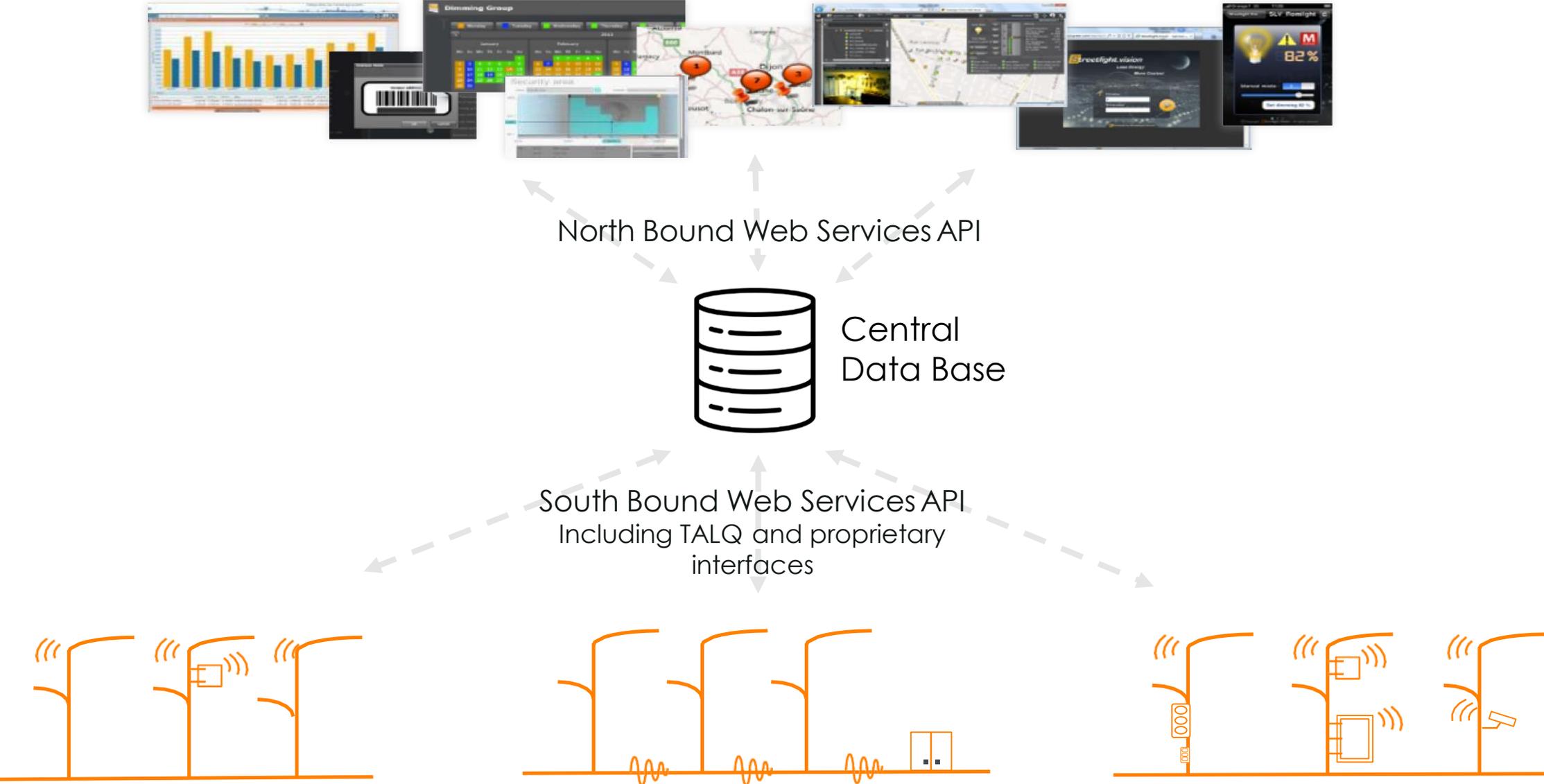
NB-IoT

Wi SUN

zigbee

# Open Central Management Software

## APIs key enabler of future use cases



# Thank You

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