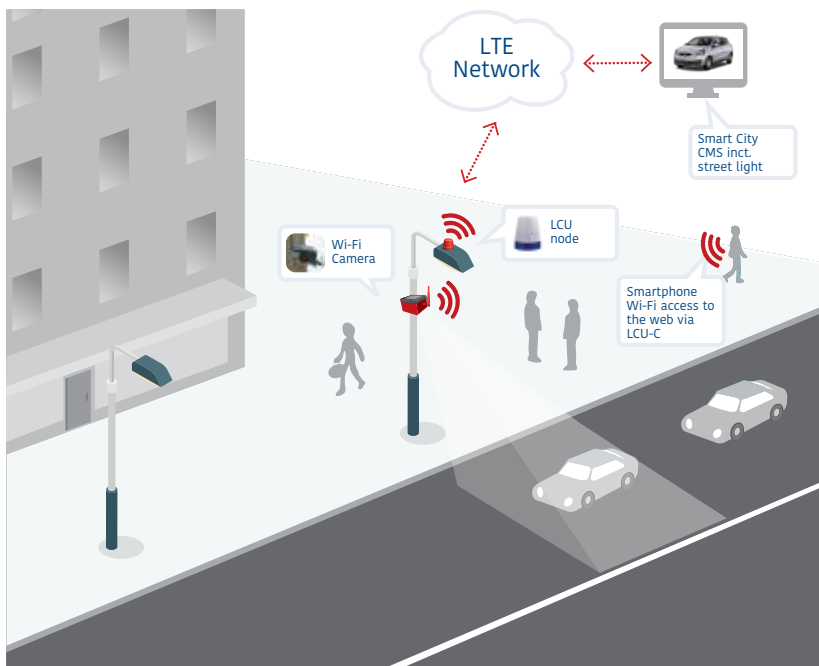# T-Light™ CELL (LCU-C)
Light Control Unit

ST Engineering

The **T-Light™** Wireless Light Control Unit - Cell (LCU-C) and its communication interface with the **T-Light** management software are key components in the Telematics Wireless Smart Lighting System. The LCU-C has three major functions: (a) control over the streetlamp luminaire, (b) provisioning of Smart City services, such as citywide Wi-Fi or environmental sensors, and (3) as a communication relay to the Smart Lighting System Control Management Software (CMS).

LCU-C uses cellular network (LTE) as its principal communication method to the CMS software. Connected to a luminaire's standard ANSI C136.41 compliant photocell receptacle (a "NEMA socket"), the LCU-C sends sensor data to the CMS, and executes scheduled and unscheduled luminaire control commands, such as on/off and dimming, received from the CMS.

In addition to its functionality as a light control unit that is identical to other T-Light LCUs, the LCU-C also operates as an internet access point utilizing its Wi-Fi capability. It can monitor and control various Wi-Fi-enabled high bandwidth sensors, such as cameras, for safety applications and many others. The LCU-C can serve to provide citizens with services related to urban environmental conditions, such as traffic congestion, safety, city info, etc.

Key Features

- Photocell for backup light control
- Built in energy meter
- Over the air firmware upgrades
- Secured data protection
- 1-10V and DALI driver interfacing
- Auto commissioning using GPS coordinates
- 7-pin NEMA for external sensors
- Built in Multi-band LTE Cellular modem
- Real-time reporting and alarms
- LTE CAT 4; Optional LTE CAT 3 and CAT 1; in Roadmap LTE CAT M and LTE NB IOT
- Built-in MIMO RF antenna (in NEMA and Conduit versions)
- IPv6 and IPv4
- TCP/IP with dynamic IP addressing
- WIFI 802.11b/g/n access point
- AT Commands over the air for device WIFI and modem configuration
- Multiple IP addressing
- Port forwarding

LCU-C node triple function

- Street Light Control node
- Access point to LTE network for the Wi-Fi based sensors incl. video cameras, traffic counters etc.
- Access point to the Internet for people

Telematics Wireless

T-Light™ CELL (LCU-C)
Light Control Unit

Applications

When associated with Wi-Fi enabled video cameras or relevant sensor and backend video processing software, the LCU-C enables:

- Camera Surveillance
- Wi-Fi access point for pedestrians
- Parking solutions
- Vehicle and pedestrian counters
- Real time data + video + audio analysis (e.g. face, multi-face, or license plate recognition)
- Environmental sensor monitoring (e.g. pollution, humidity, agricultural data - practically any IoT sensor)
- Attendance and occupancy reports
- Visitor Management, Access control (multi-person authorized / not authorized)

LCU-C

Feature Specification

Dimming – Ballast/Driver Communication Protocols:	DALI Analog 0-10V, PWM
Operating Input Voltage:	110-277V AC @50-60Hz
Load Current – 7-pin:	10A
Internal Surge Protection:	350J (10kA)
Operating Temperature:	-40°F to 161.6°F (-40°C to +72°C)
MTBF	>1M hours
Isolation:	3.75kVac/5mA/5Sec

Standards Compliance

Region	Category	Standard
All	Quality Management Systems	ISO 9001:2008
	IP Rating	IP 66 per IEC 60529-1
Europe	Safety	IEC 61347-2-11:2001 (IEC 61347-1:2007)
United States	Safety	UL 773A CSA C22.2 NO. 182.2.