

TALQ: New consortium to standardize a software interface for managing outdoor lighting networks

1. INTRODUCTION

A new consortium of lighting industry players has been formed, named the TALQ Consortium. It aims to set a globally accepted standard for management software interfaces to control and monitor for heterogeneous outdoor lighting networks and thus creates interoperability between outdoor lighting networks. The six founders of the TALQ Consortium are the following companies: Harvard Engineering, Kingsun, Philips, Schröder, Streetlight.Vision and Thorn/Zumtobel.

2. Trends in the Outdoor Lighting Market

2.1 Key lighting market and customer trends

The founders of the consortium have recognized the following trends in outdoor lighting:

- Accelerated introduction of LED luminaires in road and urban lighting
LED systems, due to their electronic nature, are relatively easy to control. Along with the strong growth of LED based outdoor lighting (75% market share expected in 2020) a strong growth of controllable outdoor lighting is expected.
- Growing need for tailor-made lighting
Adjusting the lighting depending on activity, presence, traffic and weather conditions is one of the ways to improve on energy efficiency as well as city image. By using outdoor lighting control systems the right light level at the right time and place can be realized without compromising social and road safety.
- Professionalization of city operations management to increase efficiency
Cities are looking for efficient ways to manage their assets, including lighting. Outdoor lighting control systems provide the means and tools to reduce operating costs by automatically identifying failures, reduce number of onsite trips, enable remote control and reduce energy use, while at the same time increase safety and comfort and also beautify the city.
- High pressure in the society to reduce energy consumption and CO₂
Today there is a strong need to reduce energy consumption in order to reduce our CO₂ footprint. At present only a very small fraction of outdoor lighting can be dimmed (less than 10%), so there is still great potential for energy saving with controllable outdoor lighting systems.

2.2 The trend of moving from traditional to intelligent lighting networks

The way outdoor lighting systems are operated and managed has changed greatly over time.

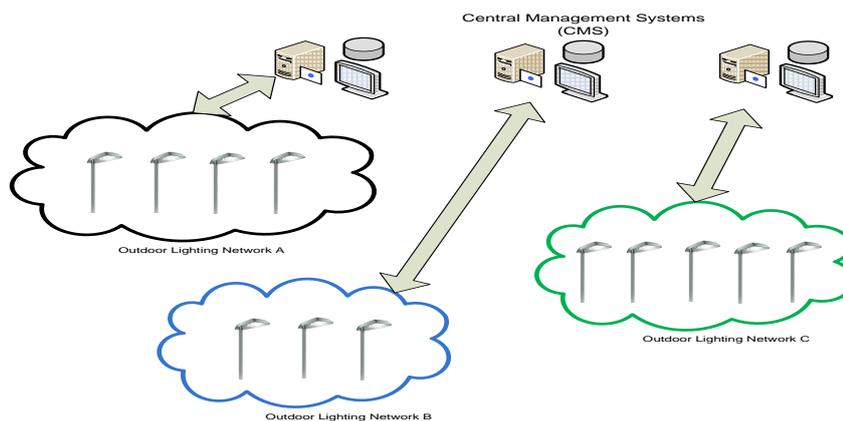
In traditional lighting scouting team were driving during the night to spot failed lights. Paper maps and files were used to manage the maintenance of the lighting installation. Light levels could not be changed; the lighting remained at the same

level throughout the night. The energy consumption of the lighting installation could only be estimated.

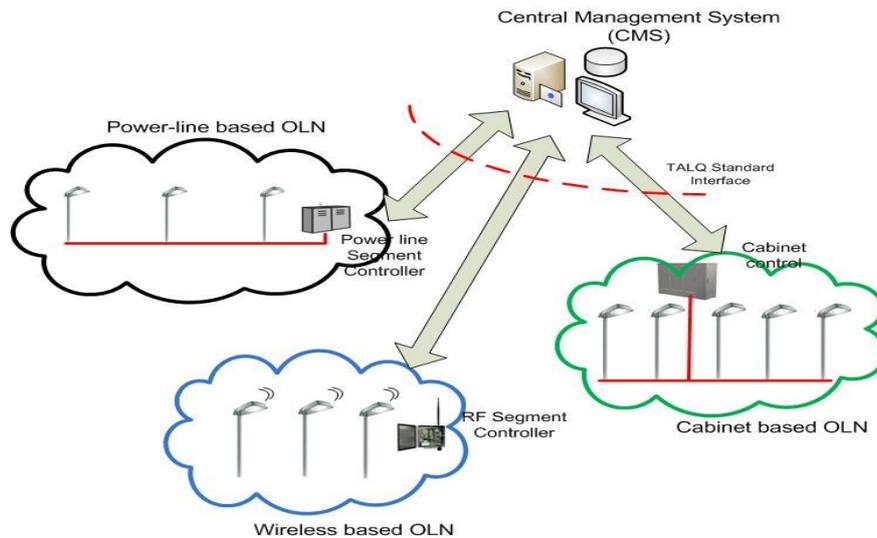
In intelligent lighting operation it is possible to remotely monitor the lighting installation and failures are automatically reported. The system can smartly plan and route the maintenance work to minimize street blockages and maintenance effort. Smart systems can dim the lights during low traffic hours to save energy or enhance lighting to improve safety. Intelligent systems are in addition often capable of accurate measuring of the consumed energy.

3. Interoperability in outdoor lighting networks

Controllable Outdoor Lighting Networks are already used in many countries. The systems consist of a central computer/server or Central Management System (CMS), and networks of connected light points, the so-called Outdoor Lighting Networks (OLN), that can be controlled by the CMS. Some manufacturers have developed their own proprietary technologies while others are using similar protocols. Interoperability between systems and system components of different brands is required to enable municipalities to benefit from systems from various manufacturers. See picture below.



The lack of a standardized communication between CMS and OLN leads to the situation that a city/region may have different systems that are non-interoperable and therefore difficult to integrate, operate and maintain. This lack of standard is overall hampering the adaptation of these systems. The TALQ Consortium therefore aims at standardizing the interface between the CMS and the OLN, see picture below.



In this way it will be possible to connect OLN of different technologies or vendors to a CMS of a different brand.

The TALQ interface will be a specification for information exchange, suitable for implementation on various physical transport systems. TALQ will focus on the so-called application layer of the interface protocol and will neither define the physical layer nor network layer. This approach will foster competition and will help to grow the market for the benefit of the end-users.

4. Scope of TALQ specification

The scope of the TALQ specification is defined by the founding companies of the TALQ consortium as following:

- The TALQ Consortium will standardize the application protocol at the interface between the Central Management System (CMS) and Outdoor Lighting Networks (OLN).
- TALQ will deliver a software protocol specification for this interface that covers parameters and behavior of end-points at the OLN and CMS side, needed for interoperability at application level.
- TALQ shall not specify any physical aspect of the connection or connectivity
- TALQ shall not specify how to achieve the required illumination behavior
- TALQ shall allow for vendor specific function or feature implementations of the local/segment controllers and management systems, fostering competition and differentiation of vendors

5. Mission of TALQ consortium

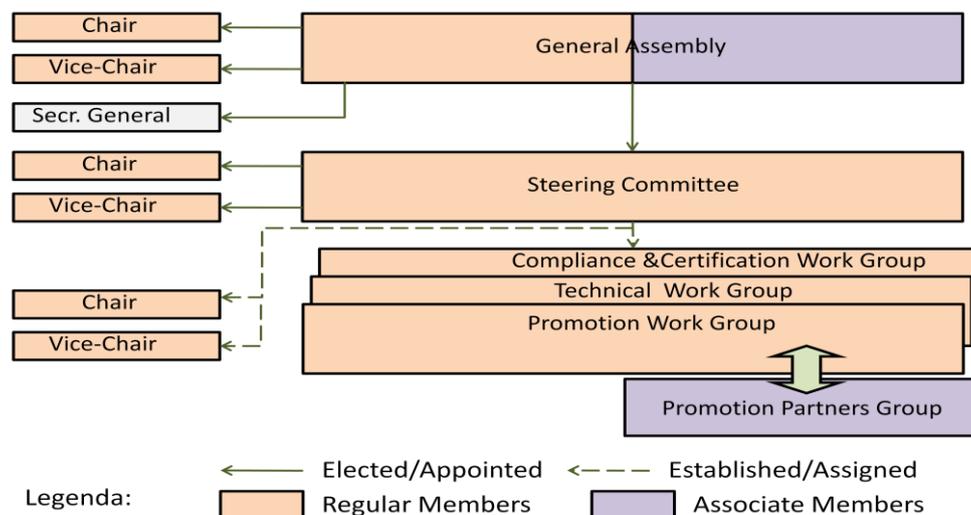
The TALQ Consortium promotes the application of OLN systems by delivering and governing a well defined interface specification for central management systems. In addition the TALQ Consortium manages a promotion, certification and compliance program, in order to:

- Enable the customer to utilize a single user interface for managing his complete outdoor lighting infrastructure
- Enable second source supply of interoperable OLN and CMS
- Stimulate market growth by fostering competition

6. The consortium organization

TALQ is a consortium of industry players with an industry-wide co-operation of members from all regions, aiming to set a globally accepted standard.

6.1 Organization of TALQ Consortium



- **General assembly**
All members are represented in the general assembly meeting at least once per calendar year.
- **Steering Committee**
The steering committee runs the day to day business of the consortium
- **Work Groups**
 - Technical Work Group for definition of the interface specification
 - Certification Work Group for definition of compliance tests
 - Promotion Work Group to define and execute promotion activities

6.2 Membership

The TALQ members subscribe to the scope and the mission of the consortium.

The consortium has two types of memberships:

- **Regular membership**
A regular member has relevant know how and the ability to commit to contribute to the success of the consortium by active participation in the Work Groups.

- Associate membership
An associate member has the possibility to give feedback to the results of the Work Groups and the ability to participate in the promotion activities.

For more information:

Website: www.TALQ-consortium.org