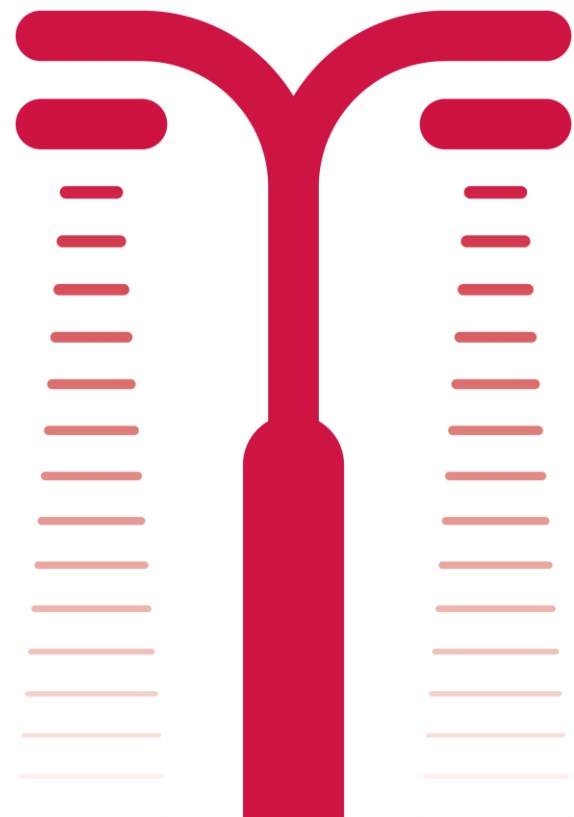# Pocket Guide for Smart Lighting Tenders

Edition #3

TALQ

The Smart City Protocol

About TALQ

The TALQ Consortium aims to define a globally accepted standard for management software interfaces to control and monitor heterogeneous smart city applications.

TALQ provides answers to the main challenges of building really smart cities including increasing safety and comfort for inhabitants, reducing energy consumption and CO_2 emissions worldwide, raising cost efficiency for operators and accelerating the introduction of LED luminaires in road and urban lighting.

Founded originally by lighting industry leaders, TALQ is open to new industry members from the entire smart city environment. Stakeholder partners, such as cities, municipalities, utilities, consultants, and others can also join our Partner program.

Let's TALQ !

About this document

The Pocket Guide for Smart Lighting Tenders is published by the TALQ Consortium to help cities, municipalities, utilities, operators and project developers to compile their own Smart Outdoor Lighting Tenders. Outdoor Lighting Networks, also called Streetlight Control, is a complex and highly technical matter that requires expertise to answer questions such as "How to assure a future-proof outdoor lighting system", "what are the right features to maximize energy savings" or "how to avoid vendor lock-in". The Pocket Guide for Smart Lighting Tenders is inspired by outdoor lighting network tenders issued by major cities globally.

How to use this document

This document is written in the form of a procurement template, so that it can be used by cities and lighting authorities to accelerate their lighting renovation programs. It does not aim to cover all potential requirements, but provide guidance on those which we have found to be important.

An editable version of the procurement template is available for TALQ Members and Partners; please contact the TALQ Consortium if you are interested in finding out further details.

info@talq-consortium.org

Disclaimer

This document is provided for information purposes only and the TALQ Consortium cannot accept any responsibility for technical or commercial implications of its use within specific procurements.

If you have any questions regarding the content of this document please contact the TALQ consortium at info@talq-consortium.org.

<Start of Procurement Template>

Table of Content

1. Introduction and Goals

A. Introduction

Our outdoor lighting network is a strategic asset for the city. But the number of light points and their geographic distribution make them expensive to operate: time to identify and fix failures, manpower for onsite maintenance operations, truck rolls, energy consumption and increasing cost of electricity. Our outdoor lighting network adds to carbon dioxide emissions from the production of electricity required to power the system.

About our outdoor lighting network:

Number and technology of light points • Total • LED • HPS • Metal Halide • Mercury • Other	• XX XXX in total • XX XXX LED • XX XXX HPS • XX XXX Metal Halide • XX XXX Mercury • XX XXX Other
Average number of burning hours per year	4100 hours
Number of KWH per year	X XXX XXX kWh
Average price per KWH	0.XX cents per kWh
Yearly electricity payments	$/€ X XXX XXX
Average ratio of kg of CO_2 per kWh	0.XXX kg of CO_2 per kWh
Yearly emissions of CO_2	XX XXX tons of CO_2

B. Objective of this Request For Proposal (RFP)

We aim to deploy a solution to improve light efficiency and reduce maintenance efforts while enhancing the quality of lighting in the city and reducing energy spending on our outdoor lighting network. It is now becoming compelling to implement solutions to identify light point failures, to remotely control the light points and collect data about their functioning, to measure, analyze and reduce consumption, in order to reduce energy spending, decrease maintenance costs, be under control in any situation, take control of energy usage and contribute to the reduction of CO2 emissions.

<If other requirements are core to city business case these should be described here at a high level>

The objective of this Request For Proposal ("RFP") is to collect information regarding possible solutions to the business requirements specified in this document (see Section 5 – Technical Specifications). Suppliers are to submit proposals ("Proposals") in accordance with the instructions specified including a detailed cost breakdown.

C. About the requested Solution

This RFP aims to select an open solution that does not force us to purchase hardware from one and only one manufacturer. The solution we're seeking is based on the following components and principles:

- **Controller**: Physical device that implements control and monitoring features applied to a lamp/luminaire/cabinet. It can identify lamp and electrical issues, measure electrical parameters and control the light level based on control programs and/or manual override. It is also referred to as light point controller or outdoor light controller or cabinet controller.
- **Outdoor Lighting Network**: luminaire controllers, software and network hardware which enable communication with the central management system.
- **Central Management System**: a system that communicates with Controllers through the Network Components to enable remote configuration, operation and management of all the Controllers.

<If Controller, Network or CMS is intended to support additional assets this can be described here>

D. Disclaimer

This RFP does not commit our organization, its employees, agents or subcontractors to any specific course of action. The issue of the RFP does not bind our organization, its employees, agents or subcontractors to accept a Proposal, in whole or in part, whether or not it includes the lowest bid, nor does it bind our organization, its employees, agents or subcontractors to provide an explanation for acceptance or rejection of a Proposal.

The cost of preparing and submitting the Proposal, and any further costs incurred prior to award of any Contract, shall be borne in full by the Supplier. Supplier shall have no recourse to our organization in this respect.

Our organization makes no representations of warranties as to the accuracy of the information contained or referred to in this document. Supplier shall rely absolutely on its own professional competence in evaluating and verifying the information contained or referred to in this document. Supplier must take every opportunity to inspect and independently verify the information contained or referred to in this document or subsequent to it, subject to comply with any agreed provisions as to confidentiality. Our organization reserves the right to supplement or amend the information contained or referred to in this document from time to time and undertakes to communicate any such amendment to the suppliers.

Neither this document nor any accompanying information is intended to form a contract between the recipient and our organization. The commencement of negotiations subsequent to this RFP does not signify a commitment on the part of our organization to enter into a contract with the supplier.

2. Timetable & Format of Response

A. Intention to Respond

Suppliers intending to submit a Proposal must confirm their intention to do so by <insert a date here>.

Confirmation must be sent by email to <insert organization's contact person and an e-mail address here>. In this communication the supplier must specify the person within its organization who will be the coordinator of the Proposal and the single point of contact for any clarification activities that may be necessary. Should a supplier decline to submit a response, these documents should be returned immediately to the contact designated below. Please clearly mark the returned documents 'No Bid'.

B. Questions from bidders

Questions regarding the procurement can be submitted by <insert a date here> to <insert location / email here>. All questions raised by suppliers and corresponding answers will be shared with all other bidders involved in the project.

C. Submission of Proposals

All Proposals must be received at <insert organization's contact person and an e-mail address here> by noon on <insert a date here>. Late proposals will not be opened or considered.

D. Format of Proposal

The Proposal will be submitted in electronic format, sent by email to: <insert organization's contact person and an e-mail address here>. No paper version shall be accepted.

E. Contacts and Procedures

All requests for clarification shall be directed by email to <insert organization's contact person and an e-mail address here>.

If a question from a supplier highlights an aspect of the project not previously considered, we reserve the right to forward this information to all the other suppliers involved in the project.

Under no circumstances should a supplier contact or communicate directly with any other personnel of the organization involved with this RFP.

In the two weeks immediately following submission, the organization intends to evaluate Proposals and may contact suppliers to clarify elements of the Proposal. It is anticipated suppliers will have the opportunity to present and discuss Proposals. Until such presentations have been arranged, suppliers are requested not to contact the organization as such interruptions will merely prolong the process of evaluation.

F. Projected Timescale

The overall timetable associated with this RFP for product/supplier selection is detailed in the table below. Suppliers should note that there are factors that may alter this schedule and suppliers will be informed as soon as possible of any changes.

Date	Action
<enter date here>	RFI / Pre-RFP feedback from suppliers (optional)
<enter date here>	RFP Issued to Suppliers
<enter date here>	RFP Responses to have been received
<enter date here>	RFP Responses to be evaluated. Shortlisted suppliers to be notified for demonstration dates.
<enter date here>	Presentation and Demonstration from selected Suppliers
<enter date here>	Decision on Preferred Suppliers

3. Evaluation Criteria

The Proposal shall as a minimum include a response to each element of Section 5 – Technical Specifications of this RFP document.

The responses must correspond to the section and question numbers as they appear within this document.

The responses shall be statements of acceptance, conformance, or otherwise. Neutral comments such as "noted" will not be accepted as a compliant response and will negatively impact the assessment of the Proposal. If a statement/question in the RFP is not applicable, this should be indicated in the Proposal with an appropriate explanation.

The Proposal will be evaluated using the following criteria:

- Openness and flexibility of the solution
- Scalability
- Functional fit
- Track record of the solution and the supplier (references)
- Product robustness and performance based on regulatory requirements
- Quality of Proposal
- Maturity of Solution
- Support organization, resources & skill levels
- Price (Competitiveness)
- Supply chain of solution
- Optional Financial proposal (EMC / EPC, Energy Management Contract, Energy Performance Contract)
- *<Flexibility to support wider features / Internet of Things / and other Smart City Applications (if relevant)>*

<Typically cities will assign weighting to each of these factors based on local requirements>

4. Supplier's Response

A. Management Summary

The supplier is required to summarize key aspects of its Proposal in a Management summary.

B. Products and Services Proposed

The supplier must provide a data sheet of all products and services proposed.

C. Detailed Response

The supplier must provide a detailed response to all elements of Section 5 of the RFP using the same table format. The supplier must also:

1. State how long it has been in business
2. Provide a comprehensive list of the resources it would dedicate for the duration of the project, including the level of experience and qualifications of staff and details of similar projects the individuals have completed.
3. Confirm the reporting structure for the project team and the escalation paths available within and above the project team.
4. Stipulate the on-going management structure for both account management and maintenance service delivery after acceptance of the solution and expiry of the warranty period.
5. Confirm how it manages the design, development and testing process for its products. What quality processes are followed.
6. Confirm if any subcontractors are involved in any aspect of the response. For instance, even if a hardware or software component is the supplier's property but is developed by a third party, the supplier shall mention it, and shall describe how the risk of losing development skills is managed in such case.
7. Provide version number of each component of the solution, frequency of version upgrades or physical substitutes in the past 3 years.
8. Confirm if it is or has been in dispute with any third party with regard to any version(s) of the product or service included in the response.
9. Advise what measures are taken to avoid virus infection of internal systems or physical sabotage and the products licensed.
10. Explain all measures taken and features developed by the Supplier to address security issues on the proposed solution once implemented.
11. Explain the suitability of the solution to support possible future integration with other Smart City Applications

D. Supplier Overview and Financial Statement

The supplier must provide an overview of its organization together with a copy of its last 3 years of annual financial report.

E. Product Overview

The supplier must provide an overview of each element of the solution, and at least for the Controllers, the Communication Network Components and the Central Management System, in the following format:

Commercial Name of the product	
Reference	
Picture for hardware or screenshot for software	
Main features	- Feature 1 - Feature 2 - Feature 3 - Feature 4 …
Dimensions (size and packaging for hardware and memory/cpu usage for software)	
Design and Manufacturing	*Who owns the intellectual property of the design and products, where is the manufacturing done*
Certifications and Agencies	
Number of such products installed	
When it was first installed in the outdoors by an end-customer	

F. Costs

A schedule of costs for the project must be included, in the format specified below:

Price elements	Price in < currency to be inserted >
Price of luminaire with embedded controller	
Price of the Controllers	
Price of the Outdoor Lighting Network Components	
Annual price for the Central Management System as a Service, upgrades, necessary daily maintenance and remote technical support Or Price of an on-site license of the Central Management System including yearly maintenance fees and specifications of the required hardware If Service Level Agreements (SLAs) are offered to guarantee performance these should be outlined *<cities may choose to specify SLA requirements>*	
On-site assistance service to help our team install the first < XXX > Controllers	
Administrator Training Session Full training about the solution	
End-user Training Session Full training about the solution	
Development cost for any specific feature	
Commissioning costs	
Any other cost	

Supplier should detail any assumptions that have been made in providing the costs above. Especially when the proposal is to become the first implementation of a new design, this needs to be mentioned and a risk evaluation is required.

G. Client List

If available, supplier should provide a list of clients where it has implemented the same solution as well as an indication of the size of these projects (number of individual Controllers under control).
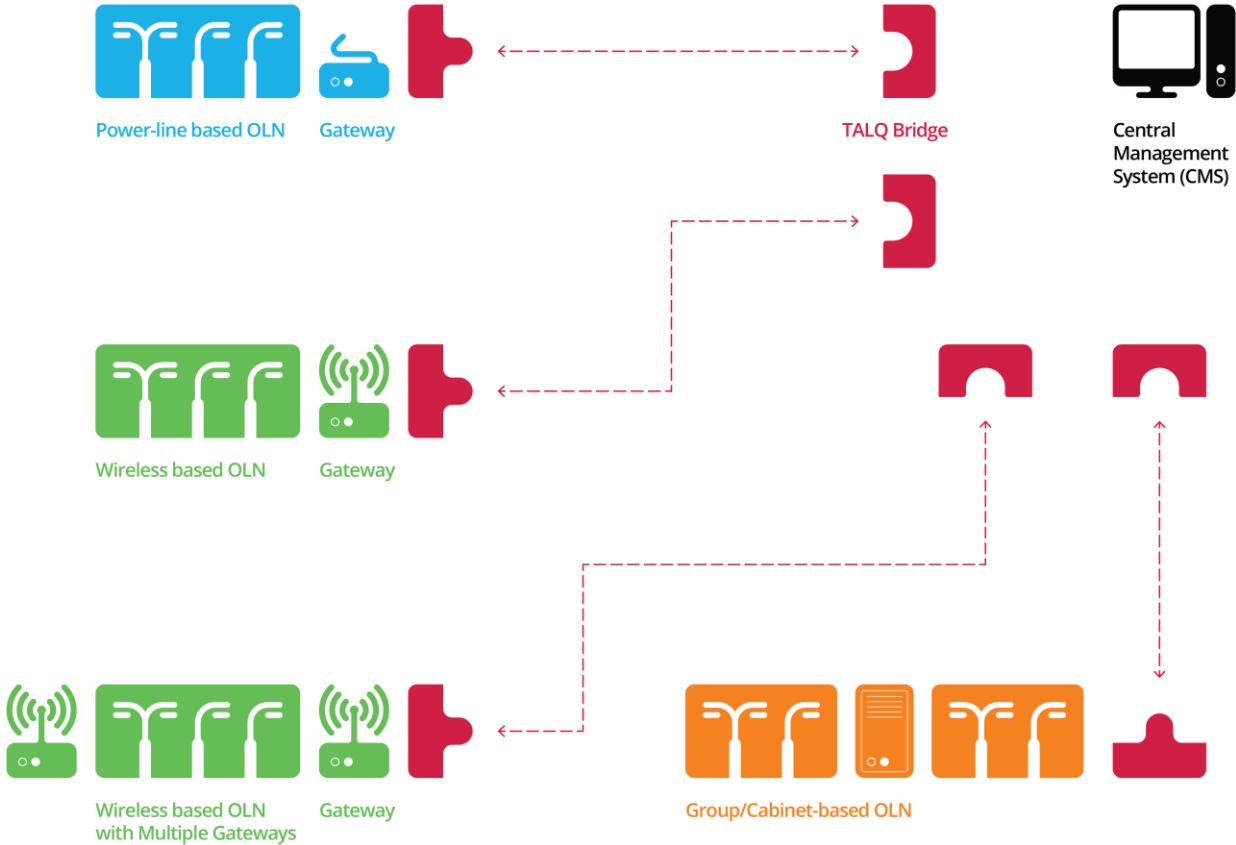
H. Site Visits

If available, supplier should provide the name and address of up to 3 clients that we may have a telephone conversation with or send a questionnaire to, who have selected and are using the solution proposed by the Supplier

5. Technical Specifications

A. Naming Convention

See definitions on page 6.

<Example architecture>

B. Technical Specifications about the Controllers

Item	Need	Specification	Mandatory / Optional	Supplier's Compliance (Comply, Partly Comply, Not Comply)	Supplier's explanation and comments
5.B.1	Certification	<Insert here the electronic and other certifications required in your country >			
5.B.2	Type of installation	< Depending on your country and practices, you may require Controllers to be installed on ANSI 136.41 7-pin socket or to be installed within the pole base or any other mechanism >			
5.B.3	Detect failures/events	Controllers shall have different detection capabilities of failures and events. Selection of required capabilities should be made, to detect failures/events such as: - lamp failure, - light state change - communication failure that are logged on the Controller or in any other component of the Outdoor Lighting Network and sent to the CMS when relevant. Supplier shall list the failures/events supported by the proposed Controller and shall describe how often and how fast these failures/events are sent to the CMS.			
5.B.4	Measure and log electrical values	Controllers may have measurement capabilities of electrical values that can be logged in the Controller or in any other component of the Outdoor Lighting Network, to be sent to the CMS when relevant. Examples of such measurements are: mains voltage, current, power consumption or power factor. Supplier shall list the electrical values measured by the proposed Controller and shall describe how often and how fast these data are measured and sent to the CMS.			
5.B.5	Provide energy and operating lamp hours	Controllers may measure the cumulative energy consumption (kWh) of the lamp and its number of operating hours, log them in the Controller or in any other component of the Outdoor Lighting Network, to be sent to the CMS when relevant. Supplier shall describe how often and how fast these data are measured and sent to the CMS.			
5.B.6	Run based on Control Program	Controllers shall accept and execute ON, OFF and dimming commands based on Control Programs and Calendars that are programmed by authorized end-users in the CMS and sent to the Controller through the Outdoor Lighting Network. Supplier should indicate if dimming is step-less or restricted to certain dimming values.			

Item	Need	Specification			
5.B.7	Accept remote manual override	The Controller shall accept and execute remote manual override ON, OFF and dimming commands that are sent by authorized end-users in the CMS and sent to the Controller through the Outdoor Lighting Network.			
5.8.8	*<Optional if wider device connectivity is required>* Serve as communication interface for Smart Cities and Internet of Things solutions	The Controller/Network/CMS shall enable connectivity to additional devices/systems X, Y and Z.			

C. Technical Specifications about the Outdoor Lighting Network

| Item	Need	Specification	Mandatory / Optional	Supplier's Compliance (Comply, Partly Comply, Not Comply)	Supplier's explanation and comments
5.C.1	Interoperability & TALQ compliance	The Outdoor Lighting Network shall be compatible with the TALQ Smart City Protocol to allow our organization to purchase and use a CMS from another vendor to control the Supplier's Outdoor Lighting Networks (and associated Controllers) or other Outdoor Lighting Networks from competing Suppliers of Controllers. The Outdoor Lighting Network shall apply TALQ Bridge functionality certified by the TALQ Consortium.			
5.C.2	Implement TALQ security requirements	The Outdoor Lighting Network shall implement the security mechanism recommended in the TALQ Technical Specification to secure the connection between the CMS and the Outdoor Lighting Network.			
5.C.3	Describe security within the OLN	Supplier shall describe in details the security mechanisms in place between each hardware/software component, including Controllers, within the Outdoor Lighting Network.			
5.C.4	Device Addressing	The Outdoor Lighting Network shall assign a unique address to each logical device in its network and share it with the CMS, following the TALQ addressing convention.			
5.C.5	System upgrade	Please indicate if system can be upgraded / updated after installation, and how this is achieved.			

D. Technical Specifications about the Central Management System

Item	Need	Specification	Mandatory / Optional	Supplier's Compliance (Comply, Partly Comply, Not Comply)	Supplier's explanation and comments
5.D.1	Support OLN Control, Command and Monitoring	The CMS shall provide features and services such as remote command, remote control and remote monitoring of Controllers and any other available object (Supplier to describe) on the OLN.			
5.D.2	CMS operational expense model	< Please mention here the operational expense model you expect to use. >			
5.D.3	Security	Supplier shall describe the security measures and processes in place in or around the CMS to minimize security risks.			
5.D.4	Licenses	The CMS shall not require 3rd party licenses or additional costs/prices not included in the Supplier's pricing proposal.			
5.D.5	Scalability	The CMS shall be proven at comparable scale to this project.			
5.D.6	Support several Outdoor Lighting Networks	Supplier shall indicate any limitation of the number of TALQ Compliant Outdoor Lighting Networks or OLN components the CMS can support.			
5.D.7	TALQ Compliance	The CMS shall be certified by the TALQ Consortium The TALQ testing process, certification process and test tools have been refined over several years to ensure interoperability and minimize risk for cities. TALQ-compliant certified products can be found on the TALQ website www.talq-consortium.org			

<End of Procurement Template>

Good luck for a transparent and successful tendering process for your future lighting installation!

The Smart City Protocol – more than just Smart Lighting
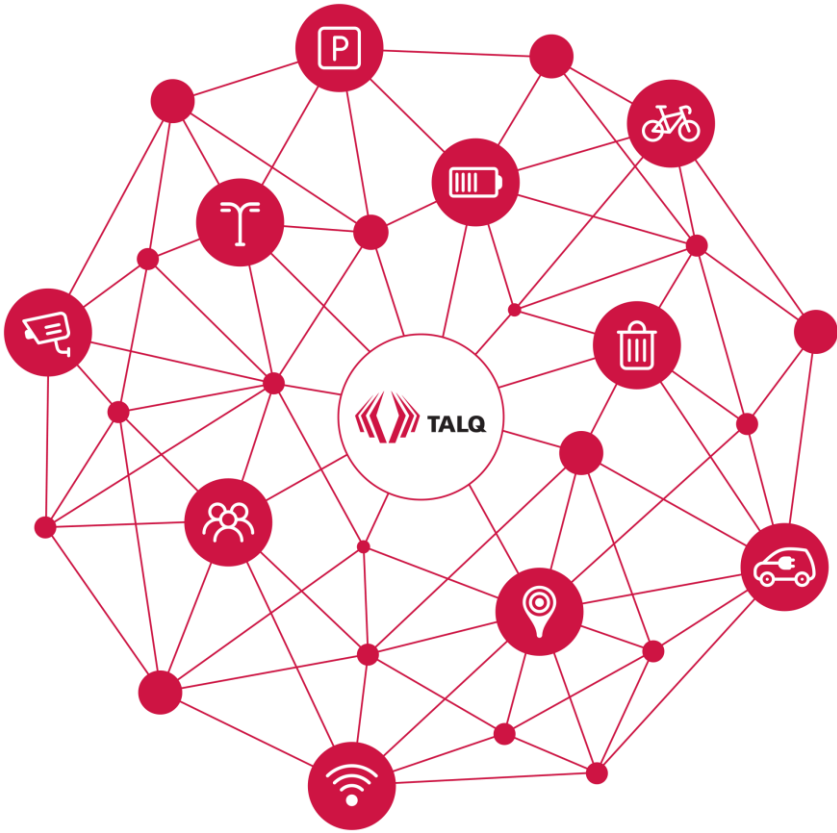
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