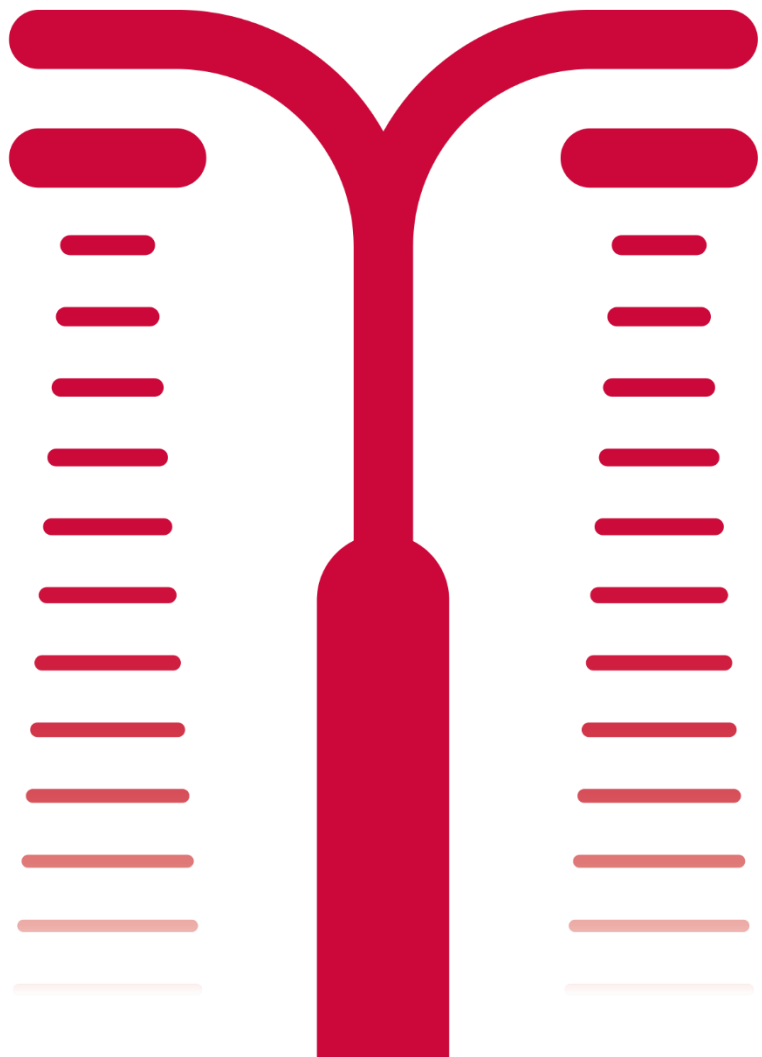


# TALQ Tender Template

## Smart Outdoor Lighting

**Edition #4**





## 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 smart city projects to increase safety and comfort for inhabitants, reduce energy consumption and CO<sub>2</sub> emissions, raise maintenance efficiency for operators and accelerate the introduction of LED luminaires in road and urban lighting.

Founded originally by outdoor 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.

More details about the TALQ Consortium, the TALQ Specifications and the TALQ profiles can be found on <https://talq-consortium.org>.

Let's TALQ !

## About this document

The TALQ Tender Template for Smart Outdoor Lighting is published to help cities, municipalities, utilities, operators and project developers to design 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 TALQ Tender Template for Smart Outdoor Lighting 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 outdoor lighting renovation programs. It does not aim to cover all potential requirements, but instead provides 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](mailto: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](mailto:info@talq-consortium.org).

<Start of Tender Template>

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# 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: For example time to identify and fix failures, manpower for onsite maintenance operations, truck rolls, energy consumption and increasing cost of electricity. Our outdoor lighting network contributes to greenhouse gas emissions from the production of electricity required to power the system and the operation of maintenance trucks.

About our outdoor lighting network:

<p>Number and technology of light points</p> <ul style="list-style-type: none"> <li>• Total</li> <li>• LED</li> <li>• HPS</li> <li>• Metal Halide</li> <li>• Mercury</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• XX XXX in total</li> <li>• XX XXX LED</li> <li>• XX XXX HPS</li> <li>• XX XXX Metal Halide</li> <li>• XX XXX Mercury</li> <li>• XX XXX Other</li> </ul>
<p>Number and technology of control gears</p> <ul style="list-style-type: none"> <li>• DALI</li> <li>• D4i</li> <li>• 1-10 V</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• XX XXX DALI</li> <li>• XX XXX D4i</li> <li>• XX XXX 1 – 10 V</li> <li>• XX XXX Other</li> </ul>
<p>Number and technology of connectors/socket to plug light point controllers:</p> <ul style="list-style-type: none"> <li>• ANSI C136 socket</li> <li>• Zhaga socket</li> <li>• No socket</li> </ul>	<ul style="list-style-type: none"> <li>• XX XXX ANSI</li> <li>• XX XXX Zhaga</li> <li>• XX XXX without any socket</li> </ul>
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 <sub>2</sub> per kWh	0.XXX kg of CO <sub>2</sub> per kWh
Yearly emissions of CO <sub>2</sub>	XX XXX tons of CO <sub>2</sub>

## B. Objective of this Tender

<Please describe here the purpose of the tender and your lighting strategy>

We aim to deploy a multi supplier 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, to reduce energy spending, decrease maintenance costs, be under control in any situation, take control of energy usage and contribute to the reduction of CO<sub>2</sub> emissions.

It is important that such a solution enables us to independently select any supplier of light points (luminaires), light point controllers, cabinet controllers and central management software, today and tomorrow.

*<If other requirements are core to your city business case, these should be described here>*

The objective of this tender 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 and definitions**

This tender describes features and specifications about individual light point control (TALQ lighting profile), cabinet control (TALQ cabinet control profile) and lighting asset management (TALQ lighting asset management profile).

It 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:

- **Tender:** In this document we use the word tender only, but it should be seen as interchangeable with ‘Request For Proposal’ (RFP).
- **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 (OLN):** luminaire controllers and/or cabinet controllers, central management software and network components which enable communication with the central management software.
- **TALQ Gateway:** An application that provides access to OLN devices from the CMS using the TALQ Smart City Protocol.
- **Central Management Software (CMS):** a system that communicates with Controllers through the Network Components to enable remote configuration, monitoring, control and management of all the Controllers.
- **TALQ Certification / TALQ-certified:** to purchase an open solution, both the Outdoor Lighting Network and the Central Management Software are requested to be TALQ-certified on *<please keep/remove the profiles requested in this tender >* the lighting profile, the cabinet control profile and/or the asset management profile, for a specific TALQ version described in section 5 below. ‘TALQ-certified’ means that, as well as being designed according to the TALQ Specification, the product has been verified using the official TALQ Certification Tool, and the result of such testing has been submitted to the TALQ Certification Workgroup, which approved the submitted certification. TALQ-certified products are published only on the TALQ website (<https://www.talq-consortium.org/certified-products.html>).
- **Declared features/capabilities:** The TALQ features and capabilities (functions, attributes and services) declared by the supplier as being supported by a CMS or an OLN. Declared features/capabilities have been tested by the TALQ Certification Tool as part of the TALQ certification process.

- **Functional test cases:** The TALQ Consortium has defined a set of functional test cases written in easy-to-understand business-relevant language, allowing customers to better comprehend the features implemented by any certified product.

The chapter 5. *Technical Specifications* refers to those functional tests with their TALQ identifiers, e.g: “5.B.7 Measure and log electrical values following the TALQ monitoring functional test cases called MTG-1 and MTG-6”. The entire list of functional test cases can be found on the TALQ website (<https://talq-consortium.org>).

*<If a Controller, OLN or CMS is intended to support additional assets or features that require a definition, they can be included here>*

#### **D. Disclaimer**

This tender does not commit our organization, its employees, agents, or subcontractors to any specific course of action. The issue of the tender 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 tender 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 [or will not] be shared with all other bidders involved in the project. Answers will be provided [as questions are received OR on <insert a date here>]

**C. Submission of proposals**

All Proposals must be received at <insert organization's contact person and an e-mail address here> by <insert a date/time 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 tender.

In the <insert time frame> immediately following submission, the organization intends to evaluate Proposals and may contact suppliers to clarify elements of the Proposal. It is anticipated that 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 timetable**

The overall timetable associated with this tender 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.

<b>Date</b>	<b>Action</b>
<enter date here>	RFI / Pre-tender feedback from suppliers (optional)
<enter date here>	Tender Issued to Suppliers
<enter date here>	Pre-bidders conference (optional)
<enter date here>	Questions from Suppliers due
<enter date here>	Answers/Responses provided

<enter date here>	Tender Responses to have been received
<enter date here>	Tender 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
<enter date here>	Duration of the contract (optional)

### 3. Evaluation Criteria

The Proposal shall include as a minimum i a response to each element of Section 5 – Technical Specifications of this tender 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 tender 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
- Cybersecurity of the proposed 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 a 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. Detailed response

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

1. State how long it has been trading.
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 cyberattacks, 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.

### C. 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.

### D. Product overview

The supplier must provide a data sheet of each element of the solution, and at least for the Controllers, the Communication Network Components and the Central Management Software, including:

- Commercial name and reference of the product (as referred on the list of certified products on the TALQ website if applicable)

- Type of OLN:
  - Powerline or radiofrequency
  - Mesh, star or mixed
  - Communication technology and protocols
- Number of such products installed
- When it was first installed on an end-customer’s outdoor lighting network
- Versions of TALQ for which the component is certified
- For hardware products:
  - Pictures
  - Main features
  - Dimensions and weight
  - Design and Manufacturing
  - Intellectual property ownership (by the supplier or resold product)
  - Lifetime and warranty
  - Certifications and agencies
- For software products:
  - Cloud and/or on-premises
  - Data retention and associated required storage
  - Scalability of the solution
  - Authentication and security
  - GDPR compliancy
  - Integration: API support, examples of integrations with 3<sup>rd</sup> party systems
  - )
  - Support service (including reporting, incident management) provided by the company
- Architecture of the solution: how products interact with each other and with 3<sup>rd</sup> party systems.
- Security aspects:
  - Personal data security and confidentiality: please demonstrate how your company complies with the General Data Protection Regulation (G.D.P.R) and also how the solution also complies with GDPR
  - End-to-end cybersecurity architecture and technical details of the solution being proposed: please provide a high level description of the cybersecurity architecture and technical choices (protocols, services, system architectures, or others) that are implemented and in production on the end2end solution being proposed as part of the tender
  - Certifications and or processes of managing the smart city platform: please provide information if your company is ISO27001 certified. Please provide details of the different management blocks and also high-level details of the platform and data management processes implemented and used.

**E. Costs**

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

<b>Price elements</b>	<b>Price in &lt; currency to be inserted &gt;</b>
Price of luminaire with embedded Controllers	
Price of the Controllers	
Price of the Outdoor Lighting Network Components	
Annual price for the Central Management Software as a Service (SaaS/Cloud) including upgrades,	

necessary daily maintenance, and remote technical support Or Price of an on-premises license of the Central Management Software including yearly maintenance fees and specifications of the required hardware If Service Level Agreements (SLAs) are offered to guarantee performance these should be outlined	
Price for higher Service Level Agreement up to < <i>please insert advanced SLA here (e.g., 99,95%)</i> >	
Price for additional data retention / storage < <i>please indicate here the requested retention delay for specific information (e.g., detailed time series, energy data)</i> >	
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	
Please list any additional costs related to communication, project management, risk management, escrow agreement settings,	
< <i>Please add here other smart city and/or IoT elements that should be part of your tender</i> >	

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.

#### **F. 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 Controllers under control).

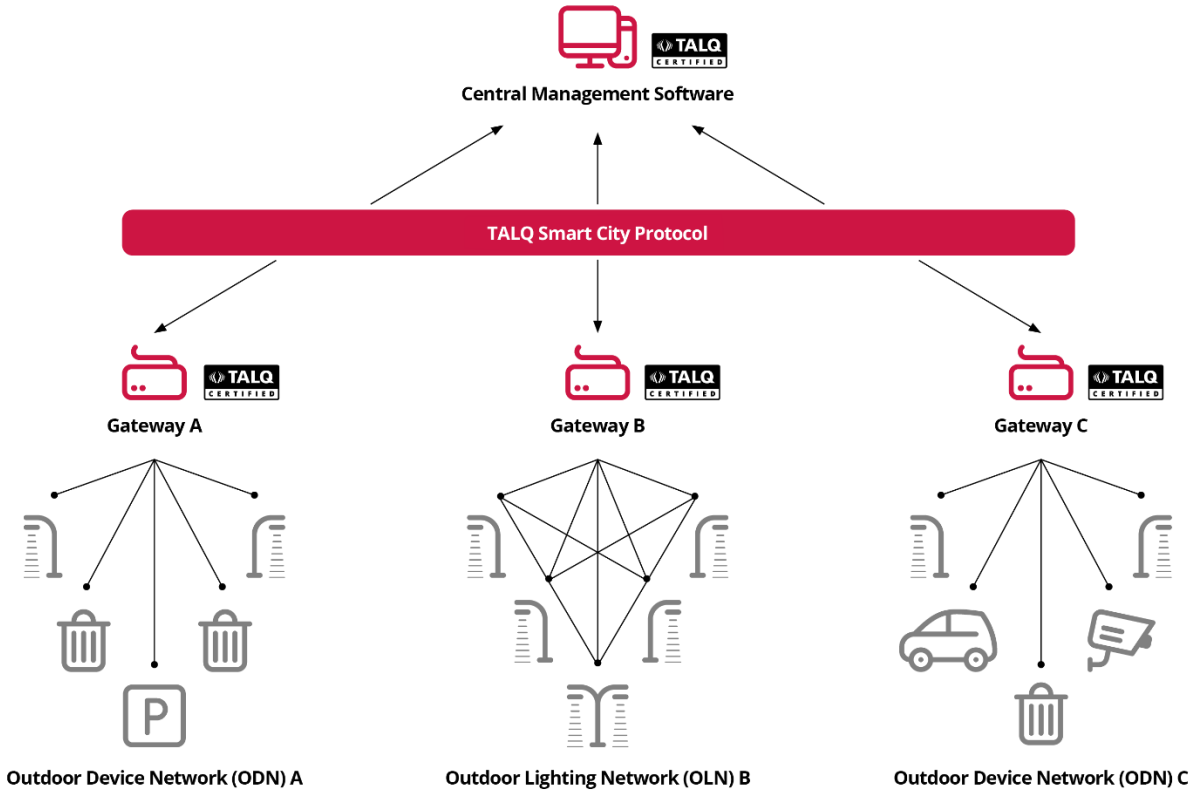
#### **G. Site visits**

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 chapter 1.C.



## B. Technical specifications about the controllers

Item	Need	Specification	Mandatory / Optional	Supplier's Compliance <small>(Comply, Partly Comply, Not Comply)</small>	Supplier's explanation and comments
5.B.1	Certification	<Insert here the electronic and other certifications required in your country >			
5.B.2	Lifetime and warranty	<Insert here the expected lifetime and associated warranty for the controllers >			
5.B.3	Identification of the Controllers, luminaires and drivers	Controllers shall be uniquely identified with a serial number that is reported to the CMS, and <optional> shall be able to read unique identifiers of the luminaire and the driver through the D4i protocol.			
5.B.4	Type of installation	< Depending on your country and practices, you may require Controllers to be installed on ANSI 136.41 7-pin socket or ZD4i connector or to be installed within the pole base or any other mechanism >			
5.B.5	Geographical positioning and auto-commissioning	< optional > Controllers shall be equipped with GPS chip and provide an auto-commissioning mechanism to avoid onsite operation at initial setup.			
5.B.6	Detect failures/events following the TALQ alarming functional test cases	Controllers shall have different detection capabilities of failures and events. Selection of required capabilities should be made, to detect failures/events such as: - report lighting alarms to the CMS, - report electrical alarms to the CMS - report invalid program and calendar 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, using the TALQ capability list, and shall describe how often and how fast these failures/events are sent to the CMS.			
5.B.7	Measure and log electrical values following the TALQ monitoring functional test cases called MTG-1 and MTG-6	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 listed in the TALQ functional test cases: lamp level feedback, mains voltage, current, power consumption or power factor. Supplier shall list and assure the electrical values measured by the proposed Controller and shall describe how often, how accurately and how fast these data are measured and sent to the CMS.			

5.B.8	Provide energy and operating lamp hours following the TALQ monitoring functional test cases MTG-2, MTG-3, MTG-4 and MTG-5	Controllers may measure the cumulative energy consumption (kWh) of the lamp, its number of operating hours number of switch-on and supply loss, 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, how accurate and how fast these data are measured and sent to the CMS.			
5.B.9	Provide mechanism to avoid data measurement to be lost	The proposed solution shall provide mechanisms to prevent from losing logged data. Supplier shall explain such mechanism when communication is lost between Controllers and other networking elements of the OLN.			
5.B.10	Run based on Control Program following the TALQ functional test cases PRG-1 to PRG-9	Controllers shall accept and execute ON, OFF and dimming commands based on Control Programs and Calendars (including calendars with exception days) 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.			
5.B.11	Accept remote manual override following the TALQ functional test case called CTR-1 to CTR-7	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. Supplier shall describe mechanisms, including queuing or losing commands, when end-to-end communication with Controller is lost.			
5.B.12	<optional> Asset Management information retrieved by Controllers and sent to CMS	<i>&lt;Please list here any additional feature related to specific asset management information that you require Controllers to retrieve from the D4i driver and send to the CMS&gt;</i>			
5.B.13	<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. Supplier shall list any extra communication costs related to such use cases.			



### C. Technical specifications about the Outdoor Lighting Network

Item	Need	Specification	Mandatory / Optional	Supplier's Compliance <small>(Comply, Partly Comply, Not Comply)</small>	Supplier's explanation and comments
5.C.1	Interoperability & TALQ compliance	<p>The Outdoor Lighting Network shall be compatible with the TALQ Smart City Protocol Version 2.6 (or above) 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.</p> <p>The Outdoor Lighting Network shall apply TALQ Gateway functionality certified by the TALQ Consortium.</p>			
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 detail 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 through the TALQ protocol or not.			
5.C.6	<Specific communication technology>	<i>&lt;Please insert here the specific radiofrequency (or other) technology and/or protocol that you request the OLN solution to comply to&gt;</i>			
5.C.7	<Specific communication network performance level>	<i>&lt;Please specify here any specific network performance level that are required (e.g., max time to deploy a scheduler/calendar on all your light points, max time to get a given alarm, max time to deliver a manual override command&gt;</i>			
5.C.8	<optional>Dynamic sensor-based lighting	The OLN shall support dynamic sensor-based lighting with sensors, hooked on one given luminaire and connected to the OLN, shall trigger a light level change on a group of other luminaires controlled by Controllers connected to the same OLN.			

#### D. Technical specifications about the Central Management Software

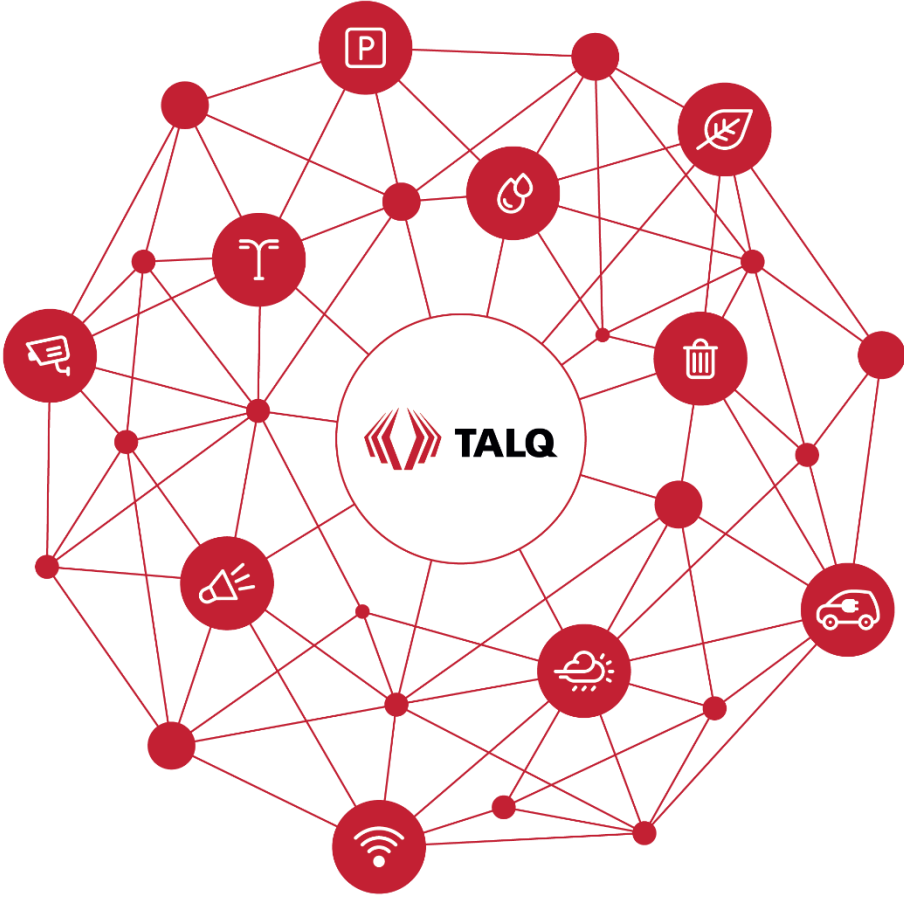
Item	Need	Specification	Mandatory / Optional	Supplier's Compliance <small>(Comply, Partly Comply, Not Comply)</small>	Supplier's explanation and comments
5.D.1	Support OLN Control, Command and Monitoring	The CMS shall provide features and services such as remote command, remote control and remote monitoring of Controllers and any other available object (Supplier to describe) on the OLN.			
5.D.2	Commissioning and de-commissioning of Controllers	The CMS shall enable users to commission and de-commission any Controller and associated luminaires.			
5.D.3	<optional> Asset Management information	The CMS shall collect asset information read and reported by Controllers from the D4i drivers, to the CMS and provide related asset management features, including alerting and reporting.			
5.D.4	Remote configuration of Controllers	The CMS shall enable users to remotely configure Controllers connected to the OLN as per the description of the TALQ functional test cases CFG-1 to CFG-11.			
5.D.5	Remote Monitoring of Controllers	The CMS shall enable users to remotely monitor Controllers connected to the OLN as per the description of the TALQ functional test cases MTG-1 to MTG-12.			
5.D.6	Remote Control of Controllers	The CMS shall enable users to remotely control Controllers connected to the OLN as per the description of the TALQ functional test cases CTR-1 to CTR-7.			
5.D.7	Collect alarms from Controllers	The CMS shall collect and manage the alarms sent by Controllers connected to the OLN as per the description of the TALQ functional test cases ALR-1 to ALR-5.			
5.D.8	Support outdoor lighting control program and calendars following the TALQ functional test cases PRG-1 to 9	The CMS shall provide outdoor lighting management features such remote programming (setting and deploying lighting control programs and calendars) through the TALQ protocol.			
5.D.9	Outdoor lighting management	The CMS shall provide data analytics, alarming, reporting and dashboarding features to turn all data and alarms and other monitoring features into energy and maintenance savings benefits.			
5.D.10	CMS operational expense model	< Please mention here the operational expense model you expect to use. >			
5.D.11	Security	Supplier shall describe the security measures and processes in place in or around the CMS to minimize security risks.			
5.D.12	GDPR compliancy	Supplier shall demonstrate its compliancy to GDPR principles.			

5.D.12	Licenses	The CMS shall not require 3 <sup>rd</sup> party licenses or additional costs/prices not included in the Supplier's pricing proposal.			
5.D.13	Backup and restore	The CMS shall provide backup and restore features, preferably in a physically separated location, to maximise the availability of the solution.			
5.D.14	Scalability and performance	The CMS shall be proven at comparable scale to this project. Supplier shall indicate the expected performance (e.g., response time for users, ability to collect massive amount of data).			
5.D.15	Support several Outdoor Lighting Networks	Supplier shall indicate any limitation of the number of TALQ-certified Outdoor Lighting Networks or OLN components the CMS can support.			
5.D.16	TALQ Certification	<p>The CMS shall be certified by the TALQ Consortium for TALQ Version 2.6 (or above). The CMS shall support TALQ-certified outdoor lighting networks compatible since TALQ Version 2.1.</p> <p>The TALQ testing process, certification process and certification test tools have been refined over several years to ensure interoperability and minimize risk for cities.</p> <p>All officially TALQ-certified products can be found on the TALQ website <a href="http://www.talq-consortium.org">www.talq-consortium.org</a></p>			

**<End of Tender Template>**

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

**The Smart City Protocol – more than just Smart Lighting**



**TALQ Consortium**  
445 Hoes Lane  
Piscataway  
NJ 08854, USA

[info@talq-consortium.org](mailto:info@talq-consortium.org)  
[www.talq-consortium.org](http://www.talq-consortium.org)