Brussels' energy utility company future proofs its smart streetlights with TALQ

TALQ

Tender scope

In August 2019, Sibelga, the distribution network operator for electricity and natural gas in Brussels, launched a public tender for an "Intelligent Street Lighting System". The ambitious project aimed to enhance lighting quality, reduce energy consumption, and modernize the city's lighting infrastructure.

Sibelga envisioned a comprehensive solution involving the gradual installation of 85,000 additional LED fixtures over a ten-year period, bringing the total to 93,000 units. These fixtures should be connected to a central management platform capable of real-time monitoring, control, and optimization of street lighting across all 19 Brussels municipalities.

The tender specifications prioritized interoperability and data exchange standards to prevent vendor lock-in. This is why the tender requested TALQ-certified systems.

93,000
light points

19
municipalities

4 systems integrated
Different manufacturers, of which one provide the Central Management Software (CMS)

20%
reduced energy consumption

Why Sibelga chose the TALQ Standard?

Selecting the TALQ Protocol and TALQ-certfied solutions as communication standard was a strategic move to ensure interoperability among diverse networks of outdoor lighting controllers and Central Management Software (CMS) for Brussels.

As mentioned in the tender, Sibelga stated that "in the interests of longevity and cost-effectiveness of the solution implemented, as part of this call for tender, [Sibelga] wishes to prioritize non-proprietary ISL solutions, built on technology and protocols used by various suppliers, and which will not oblige the Contracting Authority in the future to choose a single supplier."

Beyond ensuring interoperability and avoiding vendor lock-in, asking for TALQ-certified systems offered several key advantages for such a large-scale smart city project like Brussels'. TALQ's modular architecture allows for gradual system expansion and integration of new technologies as they emerge. By asking for systems that integrate the TALQ Specification, Sibelga saw an opportunity to adopt a reliable and future-proof outdoor lighting solution that would position Brussels at the forefront of smart city development, capable of adapting to future challenges and opportunities.

Implementation and Learning

The implementation of the smart street lighting project in Brussels, with the TALQ Protocol to make systems interact with each other, exemplified the transformative potential of interoperable IoT technology in urban infrastructure. By involving three suppliers of networked light point controllers - Schréder (Cellular), Itron (Mesh sub-GHz), and Flashnet (NB-IoT & LTE) - and Citylinx as the CMS supplier, all with TALQ-certified solutions, the project achieved a flexible system that ensured no single vendor could monopolize the infrastructure, thus maintaining freedom of choice and resilience against market changes.

The project commenced with a retrofit of 8,000 existing luminaires, subsequently adding a few thousand new connected lights each year. Leveraging the TALQ Smart City Protocol, the project's modular architecture facilitated progressive implementation and gradual system expansion. The initial deployment was particularly smooth; the rapid implementation was facilitated by preemptively asking suppliers to prepare and demonstrate their capabilities, ensuring they were ready ahead of time. The first control nodes were commissioned few weeks after launching the project, the lighting control programs were functional right away, demonstrating the system's immediate operability and Sibelga could rapidly connect the first 2,000 lights.

The experience underscored the critical role of robust data management and standardized interfaces in ensuring the long-term success of such a large-scale IoT deployments, including the integration of such a resulting system into Sibelga's broader application environment (Asset Management, Geographical Information System, Work Order & Maintenance and more). This approach, coupled with the TALQ standard, ensured that the system was not only quickly operational but also sustainable and adaptable for future expansions.

> "TALQ was crucial for this Smart Street Lighting project in Brussels. It allowed rapid deployment, seamless integration, and avoided vendor lock-in, giving the team more decision power. The TALQ Protocol ensures Sibelga's infrastructure is future-proof, adaptable, and on track for full deployment by 2030, with significant energy savings already evident."
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> **Benedicte Collard**
> Former Streetlight Manager at Sibelga

Outcomes

With over 20,000 luminaires already connected, the project is well on track to reach full deployment across the city of Brussel by 2030.

TALQ's future-proof modularity has enabled the seamless integration of emerging technologies, such as adaptive lighting. It has demonstrated its value on large projects by eliminating dependency on a single vendor and standardizing the efficient control of outdoor lighting.

The results were not only quick but also economically beneficial, evidenced by the rapid realization of maintenance & energy savings and the discovery of additional adaptive lighting capabilities. With this rollout, the city is on track to reduce energy consumption by 20% by 2030.