TALQ powers Calais' ambitious urban infrastructure upgrade

Tender scope

The City of Calais issued a comprehensive public tender to modernise its street lighting system. The primary aim was to improve energy efficiency and lower operational costs by transitioning to LED technology and incorporating advanced lighting controls. The project planned to upgrade more than 10,700 light points, emphasizing smart technologies to optimise lighting based on real-time needs, such as dynamic light adjustments for special events and energy conservation during off-peak hours.

In addition to energy efficiency, the city sought a solution that could go beyond traditional lighting infrastructure. This included integrating public sound systems for events and announcements, particularly in the city centre, where markets and public gatherings often occur.

10,700
light points

83%
energy savings

€7.5M saved in
operational costs

4 systems
integrated

Different manufacturers, of which one provides the Central Management Software (CMS)

Why the TALQ Standard was chosen for Calais' public lighting project?

The decision to request the TALQ Standard for Calais's public lighting project stemmed from several key factors, all related to the diverse needs of the city and its multi-vendor ecosystem. One of the primary reasons was the city's need for flexibility and interoperability across different manufacturers, as multiple solutions were required to meet various use cases, such as lighting control, music/voice streaming for public events, traffic light management, while also ensuring readiness for potential future use cases.

The use cases required the integration of various connectivity technologies, including 4G cellular (for legacy cabinets), powerline communications (for new street-lighting cabinet controllers and streaming sound in the city centre), and LoRaWAN for areas further from the centre.

By adopting the TALQ Protocol, a Bouygues-led consortium associated with Satelec– Fayat Energie Services, ensured seamless integration and management of diverse systems for the city—from Bouygues' Citybox for powerline communication and sound control, Lacroix's Tegis for legacy lighting cabinets via cellular, and Nexiode's LoRaWAN-based controllers, all the three systems remotely controlled by the Citylinx Central Management Software (CMS) and Smart City Platform. This approach enabled seamless integration and management of diverse solutions, while also future-proofing the city in order to be able to adapt to its evolving needs.

Implementation and learning

From the start of the project, approximately 5,000 controllers were integrated within the first year, highlighting the rapid pace at which the upgrades were progressing. This early success paved the way for a broader rollout, demonstrating the feasibility of seamlessly integrating solutions from different vendors and reinforcing confidence in the capability of the TALQ Standard to support this project.

One of the key lessons learned during the implementation phase was the critical need for interoperability between legacy systems and modern, smart solutions. The existing lighting cabinets, which were powered by a solution using 4G cellular networks, needed to be seamlessly integrated into the new smart city platform without compromising on efficiency or functionality. This was made possible through the TALQ interface, which played a pivotal role in unifying different communication protocols across the system. By using TALQ, the various technologies, including LoRaWAN, powerline communications, and 4G cellular, could work together in harmony under the Central Management Software, ensuring a seamless flow of data and control.

The consortium's forward-thinking decision to implement an open architecture proved invaluable. Not only did it ensure the seamless integration of legacy systems, preserving existing infrastructure, but it also provided the flexibility to accommodate future technological upgrades. This approach allowed the city to enhance its lighting management without costly overhauls.

Outcomes

The Calais smart lighting project has already demonstrated encouraging early results, even as the work continues to evolve. The transition to LED lighting, along with the deployment of advanced lighting controls, is projected to generate an impressive 83% energy savings, potentially translating to €7.5 million in savings over the next eight years. This expected reduction in energy consumption underscores the immediate and long-term impact that smart technologies can have on public lighting.

Additionally, the open architecture provided by TALQ ensures that Calais remains adaptable - not limited to a single vendor or technology, and able to evolve to many use cases. As the project progresses, this flexibility will allow the city to seamlessly integrate future solutions—whether through new LoRaWAN providers or additional smart city features like parking management and traffic light control—while maintaining a cohesive control system. With these ongoing upgrades, the city is building a foundation for a scalable, future-ready smart city infrastructure that can evolve alongside technological advancements.

Image: Cwervaec