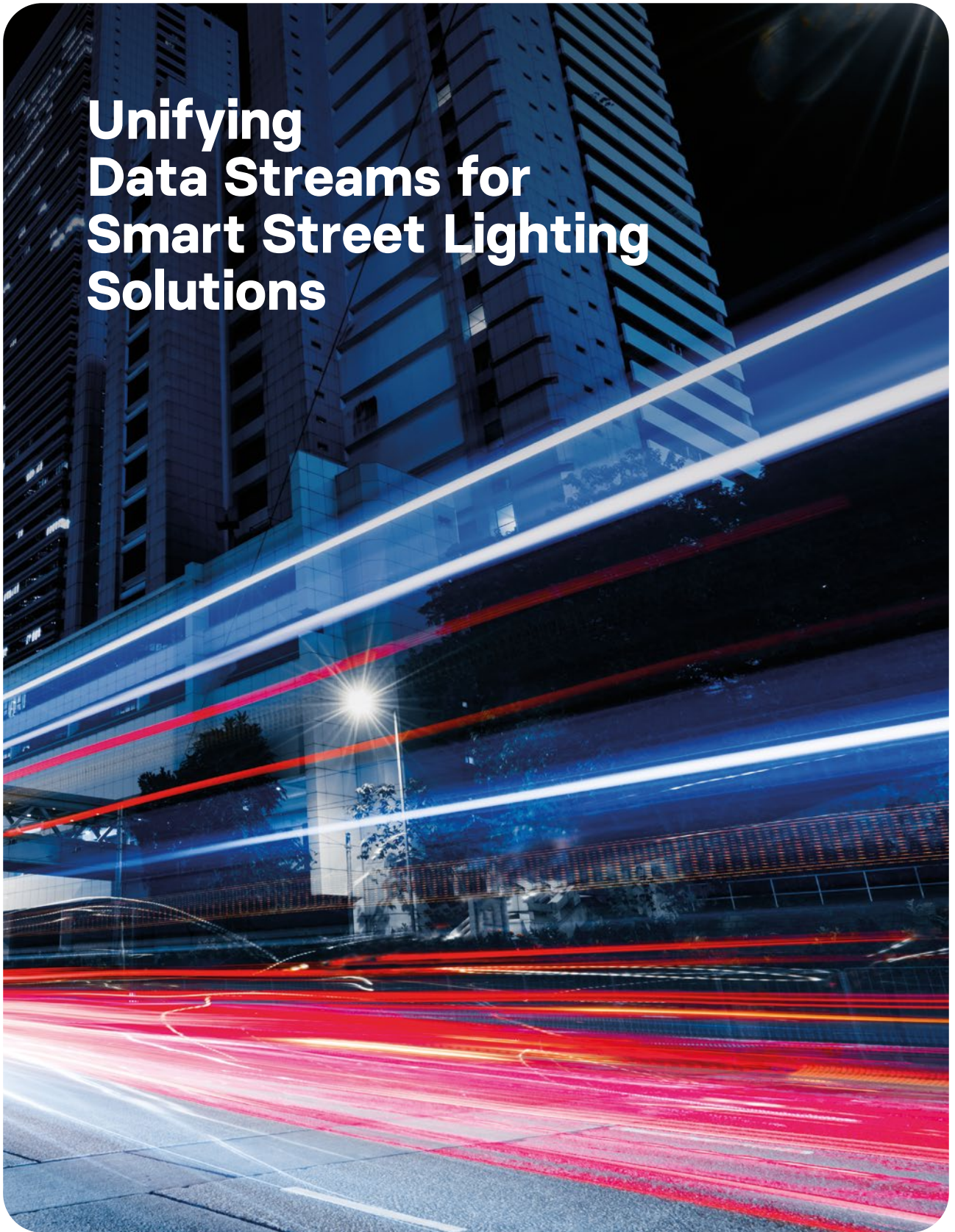


# Unifying Data Streams for Smart Street Lighting Solutions



# Integration of Global Outdoor Lighting Standards

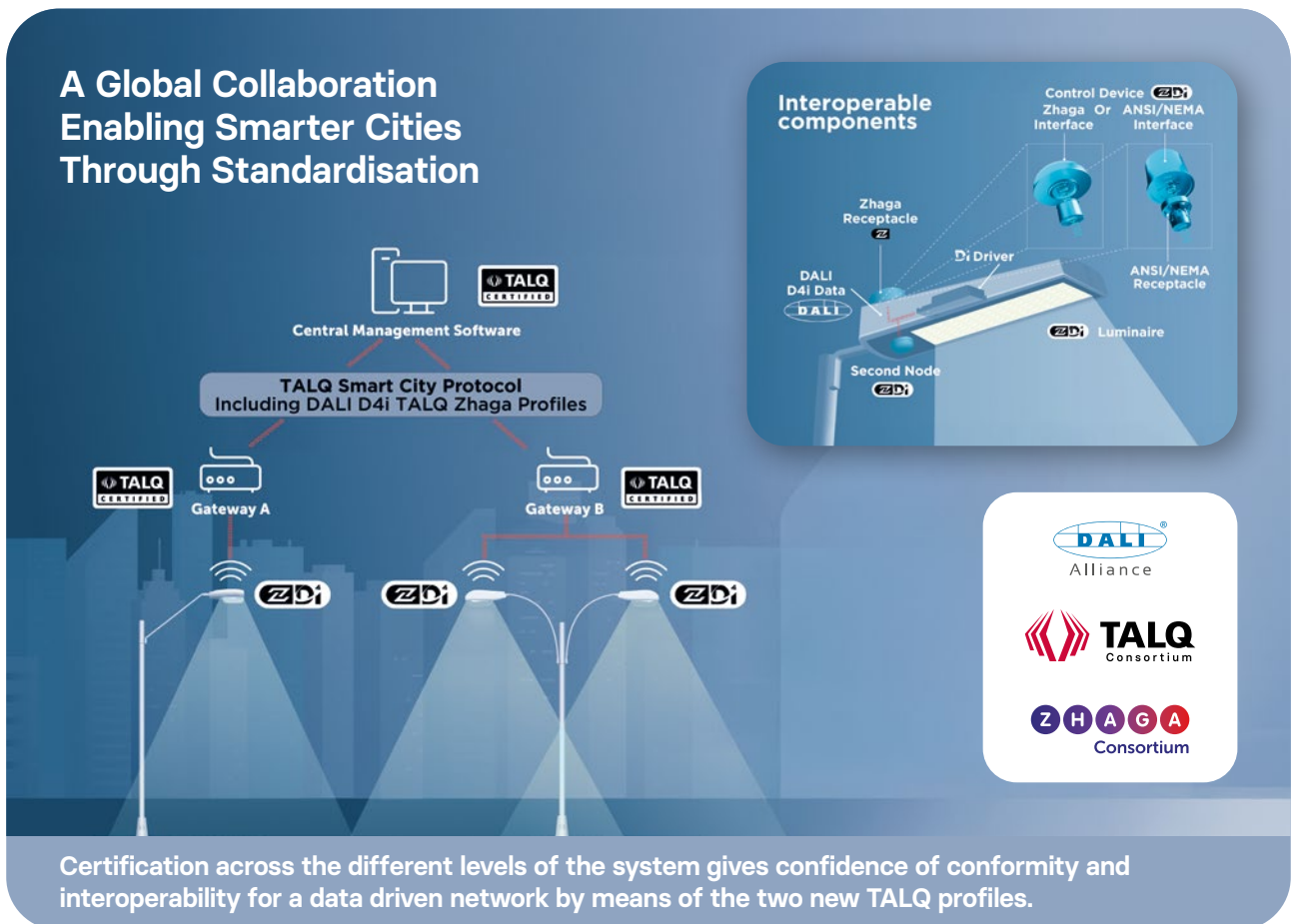
Investing in smart street lighting infrastructure is a long-term commitment that shapes the technological landscape of a city or community for decades. Given that these projects often rely on public funding, they require a careful, transparent, and well-informed selection process.

Since 2024, the DALI Alliance (DALI), the TALQ Consortium (TALQ), and the Zhaga Consortium (Zhaga) have been working together to unify data streams for smart street lighting systems. Each organisation develops international lighting standards to support informed investment decisions by public and private stakeholders and this collaboration aims to improve interoperability and communication across outdoor lighting networks.

Starting in 2026, the joint technical approach has enabled the respective specifications of DALI, TALQ and Zhaga to reflect the data and control requirements of outdoor lighting control systems across all three industry standards.

The collaboration has produced two new TALQ profiles\*: **'DALI D4i Luminaire TALQ Zhaga'** and **'DALI D4i Sensors TALQ Zhaga'**, linking DALI attributes across multiple DALI Parts to these profiles.

This initiative enables unified data transfer from individual streetlight components up to the central city management platform through standardisation at the attribute and profile level.



\*A profile is a capability offered by a TALQ-certified product to support data elements (attributes) describing a particular operational scenario. Each profile is a predefined grouping of TALQ functions and attributes that specifies which features are mandatory or optional for a particular smart-city application. Current TALQ profiles include: Cabinet Control; Environmental Monitoring; (General) Lighting Asset Management; Smart Parking; Smart Traffic; Waste Management; DALI D4i Luminaire TALQ Zhaga; DALI D4i Sensors TALQ Zhaga.

# Scope of the new TALQ Profiles

TALQ version 2.7.0 offers two new profiles to support DALI-D4i-TALQ-Zhaga unification. The **'DALI D4i Luminaire TALQ Zhaga'** profile supports seamless communication with D4i-certified luminaires. The **'DALI D4i Sensors TALQ Zhaga'** profile facilitates connection with sensors attached to Zhaga-D4i-certified luminaires.

Compliance with either of these TALQ profiles – proved by the single certification processes – means that any and all data from devices (luminaires and sensors, respectively) that might be required to be managed by a remote operator are available on operators' screens in the central management software (CMS).



## Scope of DALI Parts (D4i driver and sensor data) included in the new TALQ profiles

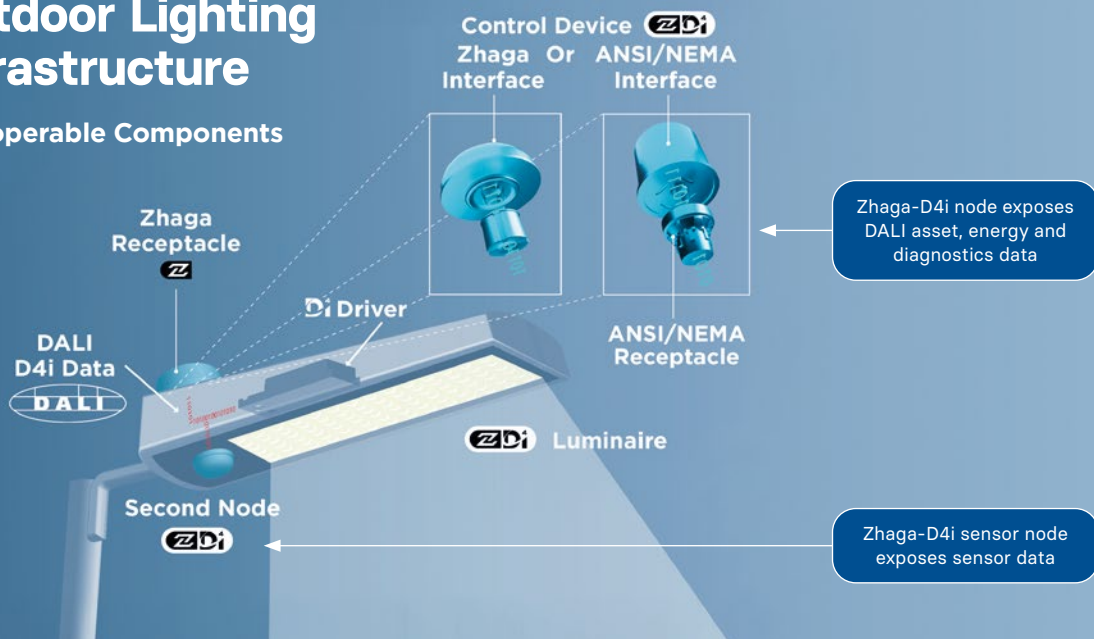
- **Control Gear Data:** Identification, configuration and operational parameters of the control gear, enabling standardised discovery and management.
- **Luminaire Data:** Asset and product information describing the luminaire, supporting inventory, commissioning and lifecycle management.
- **Energy Data:** Electrical measurements and accumulated energy consumption for monitoring and optimisation of energy usage.
- **Diagnostic & Maintenance Data:** Status, fault and operating information supporting condition monitoring and maintenance activities.
- **Sensor Data:** Standardised access to a wide range of sensor types defined across multiple DALI Parts (Occupancy, Light and other sensor types as listed in Part 306), enabling interoperable and vendor-independent sensor data.

# Central Management Software



## Outdoor Lighting Infrastructure

Interoperable Components



# Benefits for Cities, Operators & Manufacturers

The collaboration between DALI, TALQ, and Zhaga plays a key role in advancing a wide range of sustainability goals. Thanks to proven international standards, customers benefit from deepest technical experience elaborated over more than a decade.



Creating a truly **unified solution** by providing a methodology for DALI driver data and Zhaga-D4i sensor data to be visible in a TALQ-certified CMS.



**Simplifying the tender process** and the selection of required profiles, thereby providing confidence to specify data-driven networks, today and tomorrow.



**Removing ambiguity** and providing clarity for users and manufacturers about the data and commands communicated from hardware to the cloud dashboard, thanks to TALQ Certification, DALI D4i Certification, and Zhaga-D4i Certification.



Providing **clear requirements** for manufacturers regarding mandatory product features.



**Facilitating asset management** throughout the entire lifecycle: from transferring asset management data during luminaire switch-out, to resetting driver burn hours while maintaining LED module on-time continuity.



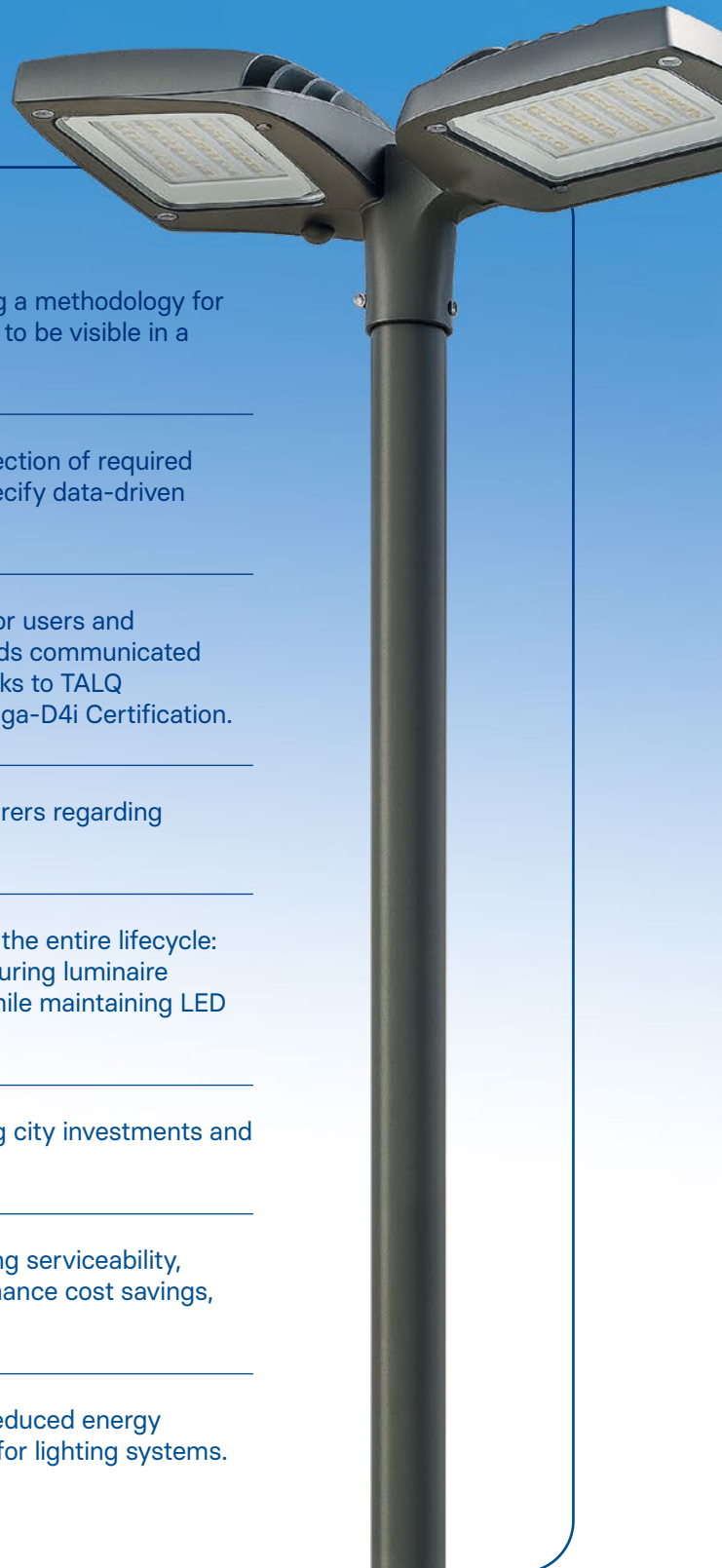
Safeguarding **future readiness** by protecting city investments and ensuring supply-chain longevity.



Ensuring **operational efficiency** by enhancing serviceability, reducing operating costs, delivering maintenance cost savings, and ensuring openness and interoperability.



Delivering **sustainability benefits** through reduced energy consumption and enabling a longer lifetime for lighting systems.





The DALI Alliance (also known as the Digital Illumination Interface Alliance or DiiA) is an open, global consortium of lighting companies. DALI focuses on developing and managing digital lighting control specifications based on the IEC 62386 standard, enabling the widely recognised DALI-2, D4i, and DALI+ certification programs.

Their commitment to interoperability and certification ensures that lighting components and systems can seamlessly integrate and communicate.

[info@dali-alliance.org](mailto:info@dali-alliance.org) | [www.dali-alliance.org](http://www.dali-alliance.org)



TALQ is an industry consortium that has developed and introduced a globally accepted standard for outdoor lighting systems using a standardised interface protocol for heterogeneous outdoor device networks. The standard has been widened to include other smart city applications, like waste management, smart traffic, parking and environmental sensing.

The TALQ Smart City Protocol enables consistent data to be used within smart city device networks and with the central management systems of cities and communities.

[talk2@talq-consortium.org](mailto:talk2@talq-consortium.org) | [www.talq-consortium.org](http://www.talq-consortium.org)



Zhaga is a global consortium of lighting industry members. Well-known for its work in creating interface specifications for LED light engines and sensor and communication modules, Zhaga ensures interoperability across different manufacturers.

By enabling interoperable LED components and their certification, Zhaga has helped to foster innovation and flexibility within the LED lighting industry.

[info@zhagastandard.org](mailto:info@zhagastandard.org) | [www.zhagastandard.org](http://www.zhagastandard.org)