

The E4S Alliance becomes international non-profit based in Brussels, strengthening Europe's smart grid vision

After five years of close cooperation as an informal network of distribution system operators (DSOs) and technology partners, the E4S Alliance announces its official incorporation as an international non-profit association based in Brussels. The new legal structure strengthens the Alliance's mission to promote open, interoperable and secure edge standards for smart secondary substations and to accelerate digitalisation across electricity distribution networks.

The decision to establish a legal entity was validated during the Alliance's General Assembly on November 19 hosted by the premises of Iberdrola in Bilbao, where current members met to confirm the new governance framework and reaffirm their shared commitment to supporting Europe's digital and energy transition. The incorporation was later highlighted at the fair of **Enlit Europe 2025 in Bilbao**, where the Alliance made its first official appearance as a formally constituted organisation.

A shared vision for the future of electricity distribution

The Alliance's vision is to contribute to electricity networks that are more intelligent, flexible and resilient, in line with the growing complexity of a system shaped by decentralised generation, electrification and new consumer behaviours. Members have collectively advocated for a future where the edge of the distribution grid can host secure intelligence, enabling faster decision-making and improved coordination across all layers of the system.

The E4S Alliance aims to provide an open forum for defining a standards-based edge-computing platform for secondary substations, with the capability to implement multiple use cases requiring data processing and communications. The Alliance works to accelerate demand for Smart Grid products and services through market education programmes while encouraging broad industry adoption of its specifications. By maintaining productive relationships with educational institutions, government research institutes and other technology consortia, the organisation seeks to position its work as a global standard for electric power distribution networks. Central to this vision is the protection of consumer interests and the promotion of competition amongst vendors through uniform, industry-wide conformance testing that ensures genuine interoperability of products. The Alliance's specifications remain voluntary, allowing members the freedom to pursue alternative approaches while collectively advancing a common framework that can benefit the entire electricity distribution sector.

A mission grounded in openness and collaboration

From the outset, the E4S Alliance seeks to create practical foundations for interoperability and security at secondary substations. Its mission has relied on three core principles:

- **Openness**, with the development of specifications that can be implemented by multiple vendors;
- **Security**, ensuring trusted communication and robust device identification;
- **Interoperability**, reducing integration complexity and enabling DSOs to adopt new digital solutions more consistently.

By formalising its structure, the Alliance aimed to transform these principles into a sustainable work programme supported by transparent governance and long-term continuity.

A focused scope to address real operational needs

During its five years of collaborative work, the E4S community concentrated on areas where aligned approaches could have the greatest impact. This included defining practical requirements for edge computing at secondary substations, exploring architectural building blocks for secure communication, and identifying opportunities for testing and validation across different networks.

The incorporation of the Alliance now enables these efforts to continue with greater clarity and coordination. It also positions the organisation to engage more effectively with standardisation bodies, regulatory discussions and cross-border initiatives designed to modernise electricity distribution.

Looking ahead

With its new legal status and its introduction at Enlit Europe 2025, the E4S Alliance entered a new phase. The organisation is now equipped to expand its community, structure its technical workstreams and support more operational pilots in cooperation with DSOs and technology partners.

Building on its initial achievements, the Alliance intends to play an active role in Europe's broader digitalisation agenda and to contribute to the development of reliable, future-proof solutions for the distribution grid.