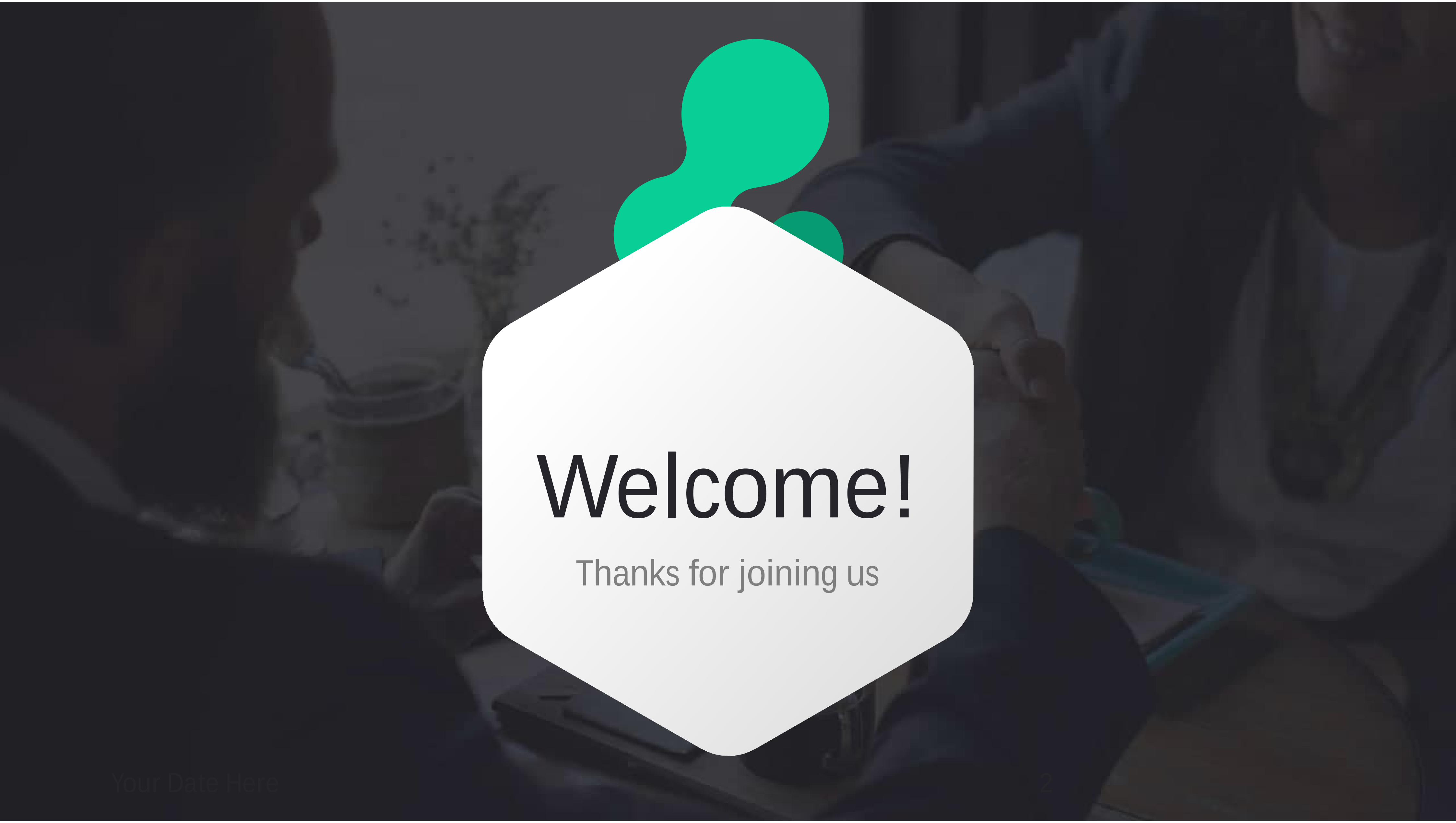
E4S Alliance

Shaping the future of Smart Secondary Substations

supported by

19th November 2025



Welcome!

Thanks for joining us

Programme

12:00h. – Opening remarks

- E4S Alliance President - Enrique García
- BASQUENERGY Cluster - José Ignacio Hormaeche

12:10h. – Official announcement. Presentation of the E4S Alliance

- i-DE – Javier Hernández
- ENEDIS – Marc Delandre
- E-REDES – Paulo Líbano
- UFD – Mariano Gaudó
- A2A – Alessandro Cirocco

12:45h. – Q&A session

Programme

13:00h. – Panel discussion

"The E4S Alliance as a booster for the Smart Grids industry value chain"

- BASQUENERGY Cluster (*moderator*) – José Ignacio Hormaeche
- ABB – Johan Pensar
- BARBARA – Peter Rawlins
- MERYTRONIC – Imanol López
- ORMAZABAL – Luis Del Río
- SCHNEIDER ELECTRIC – Ludovic Lamberti
- TECNALIA – Marta Castro
- ZIV – Galder Vizcaya

14:00h. – Networking lunch


E4S alliance
Presentation
of the
E4S Alliance
19th November 2025

Presentation of the E4S Alliance

Javier Hernández

i-DE Grupo Iberdrola

Marc Delandre

ENEDIS

Paulo Líbano

E-REDES

Mariano Gaudó

ufd Grupo Naturgy

Alessandro Cirocco

a2a LIFE COMPANY

Agenda

01 CONTEXT & SCOPE
Our Motivation

02 VISION & MISSION
What we intend

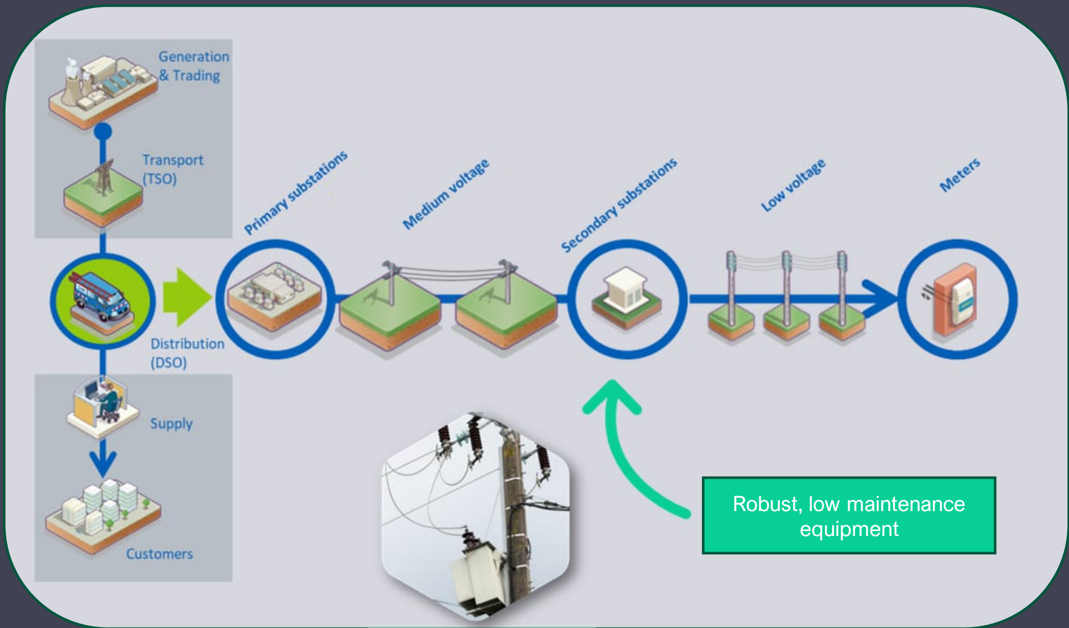
03 USE CASES & ARCHITECTURE
Our Solution

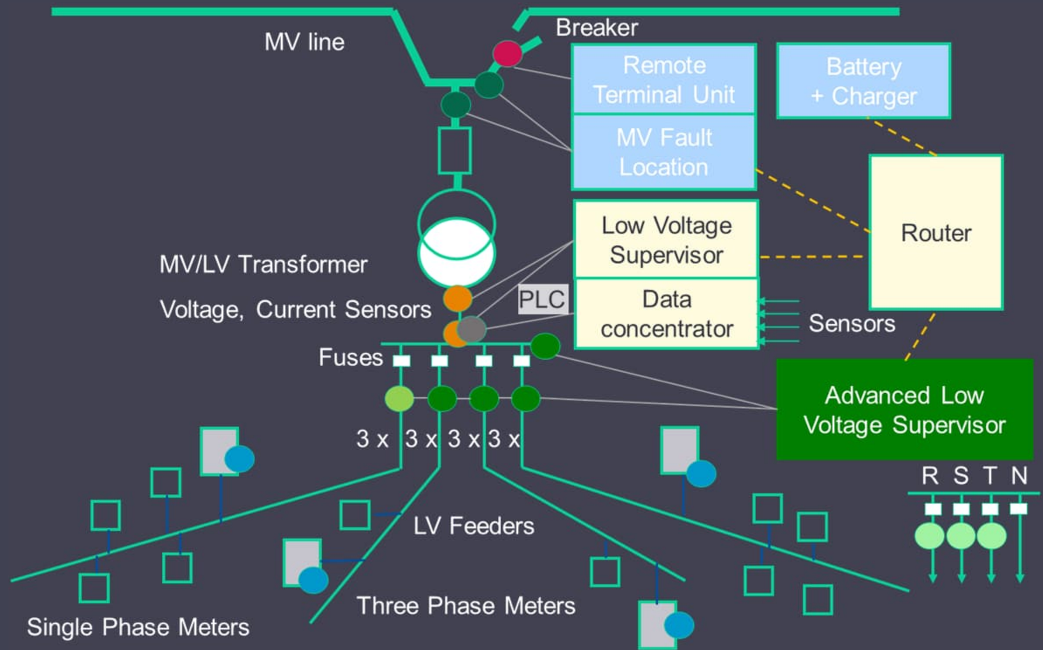
04 E4S ALLIANCE
Who we are & how we organize

05 CALL TO ACTION
How to join

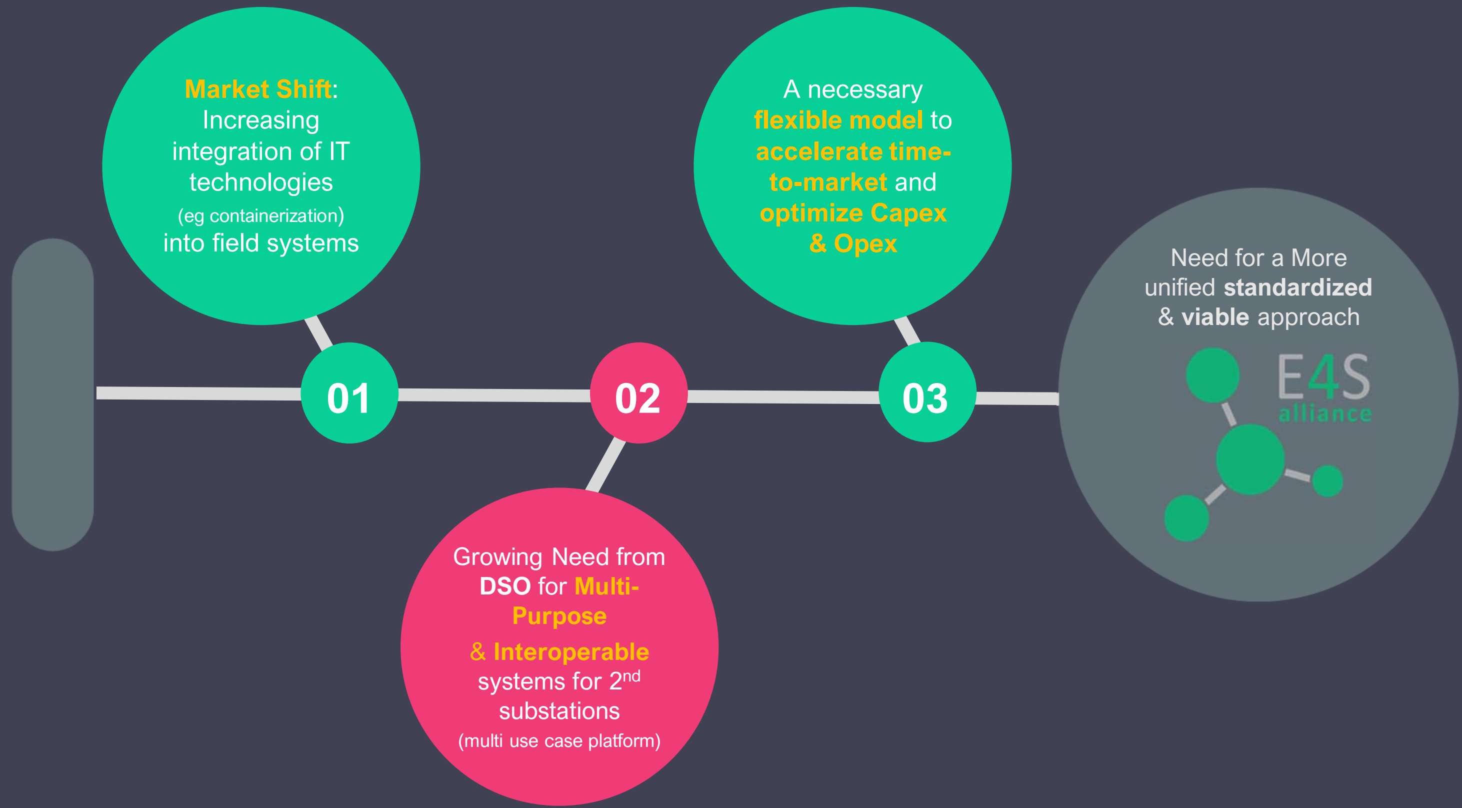
The scope ...

Secondary Substation refers to the utility premises where **distribution Transformers (MV to LV)** directly **feeding final customers** are located**.**





Drivers for Establishing the E4S Alliance



- Several DSOs agreed on working together with manufacturers and other entities, in order to define a standardized solution
- Work started by a set of companies forming the E4S Consortium
- To guarantee a stronger commitment and working context, the consortium evolved to the E4S Alliance, a non-profit Association based in Brussels

Vision: Shaping the Next Generation of Secondary Substations

Flexible platform

Community of DSO & partners

Vision Statement of the E4S alliance

E4S is a **DSO-driven alliance** committed to defining and maintaining a secure, open, public, **vendor-neutral,** and **interoperable edge computing architecture** for Smart Secondary Substations. It establishes recognized **standard specifications** to address major **DSO challenges** in the ongoing transformation of grids

Standard based

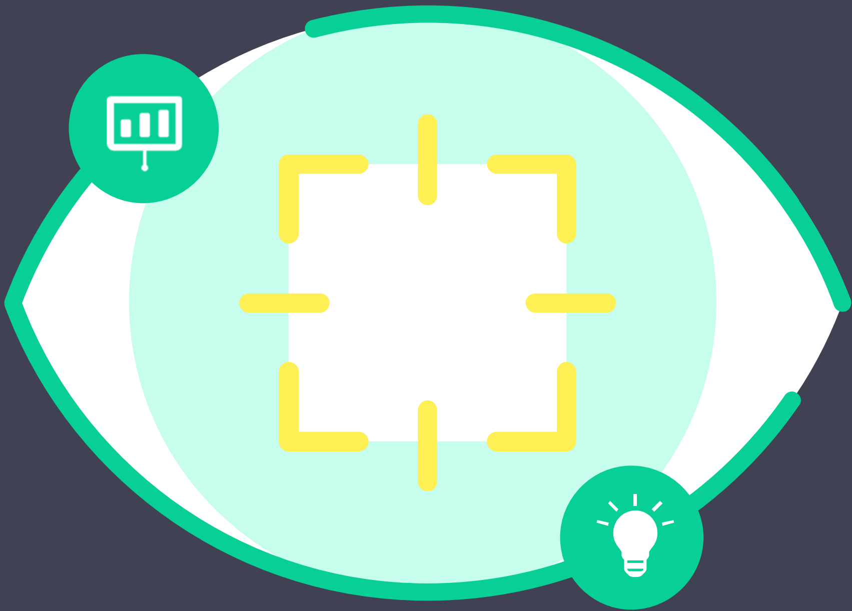
Grid modernization

E4S mission

Standardizing Edge & virtualization in 2nd Substations

Leverage on **DSO and Industry collaboration** to promote the development and usage of a **standard based approach**, utility and industry wide, for an edge computing platform in secondary substations

- Identifying all **relevant use cases**
- Creating/maintaining a solution **specification**
- Creating/maintaining a **certification process**
- **Driving ecosystem development** and market adoption, while **empowering vendors** to actively contribute and adapt their solutions

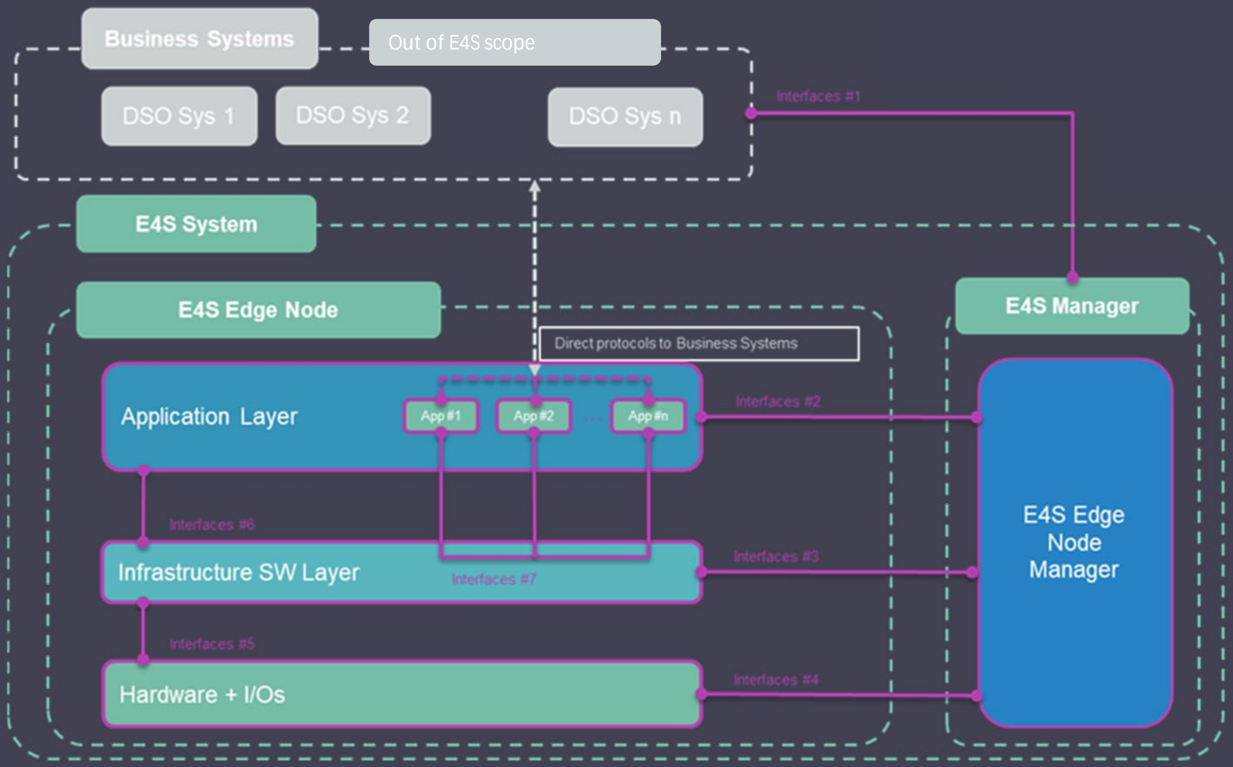


E4S Specification: A Foundation for Standardization

E4S is committed to **exploring the potential for our specifications** to become recognized as official standards. The E4S specification shall provide a **cohesive framework** :

- Fulfilling the **DSO requirements**
- Providing the **flexibility to develop optimal components**
- Promoting fair competition and eliminating barriers to entry

Accelerating the E4S Solution Definition



Key Technical Requirements

- Layered Architecture with standardized interface principles
- Unified System Management
- Hardware–Software Agnosticism and Component Interchangeability within the Architecture
- Vendor-neutral approach regarding procurement and maintenance models
- Linux / Open Source / Standards-based solutions
- Encourage vendor innovation by imposing minimal technical constraints
- Clear process of certification

Targeted Use Cases

Measurement, data collection & control command

1. Data Concentrator for Smart Metering
2. Remote Terminal Unit (MV)
3. Remote Terminal Unit (LV)

Voltage & power Quality management

1. Advanced Low Voltage Supervisor
2. Voltage Regulation
3. Load Balancing & Energy Management

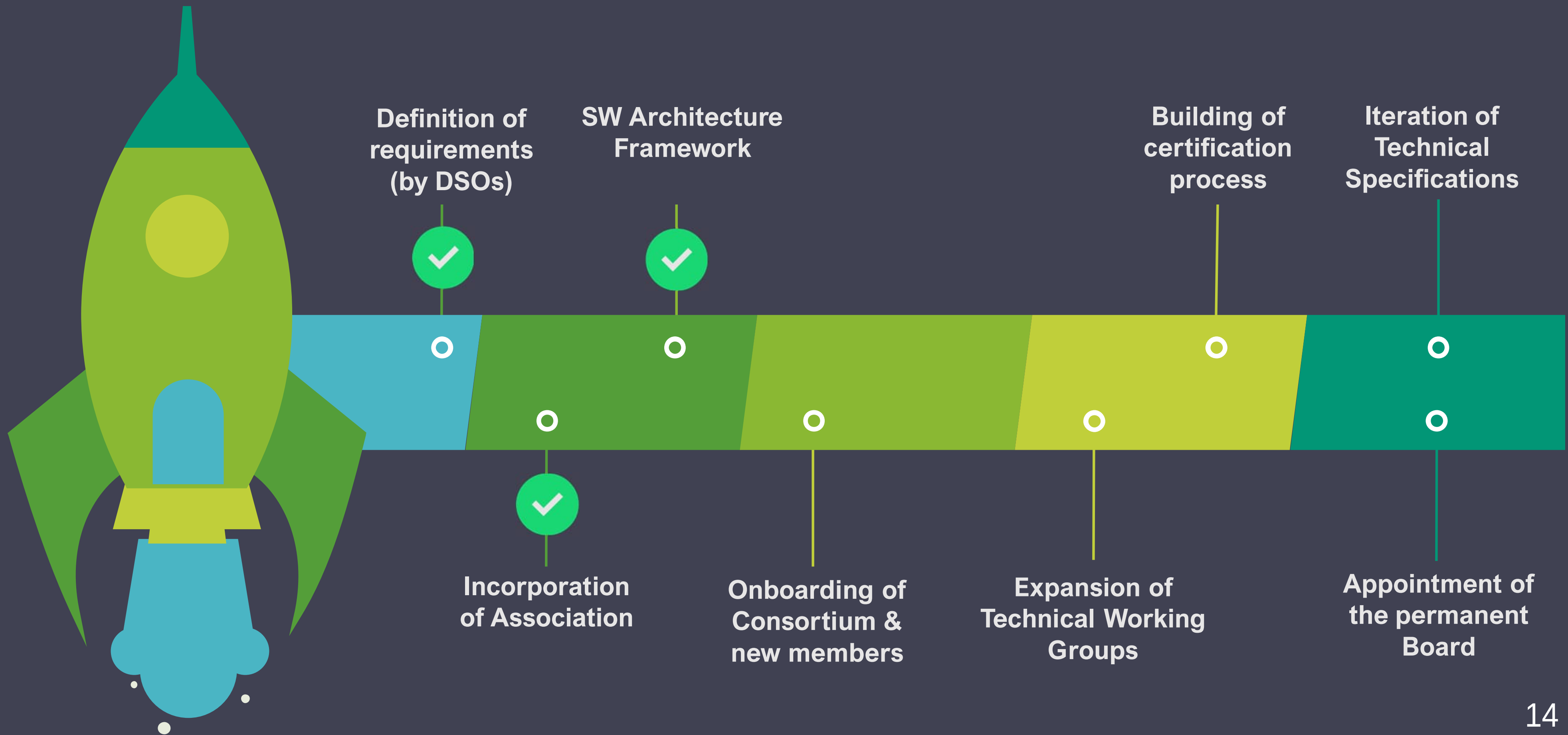
Operation & grid monitoring

1. Outage Management
2. Secondary Substation & Transformer Monitoring
3. Grid Topology Identification

Distributed & smart energy system

1. Distributed Energy Resource Management
2. Street Light Control

Accelerating the new E4S roadmap



Our Current Members

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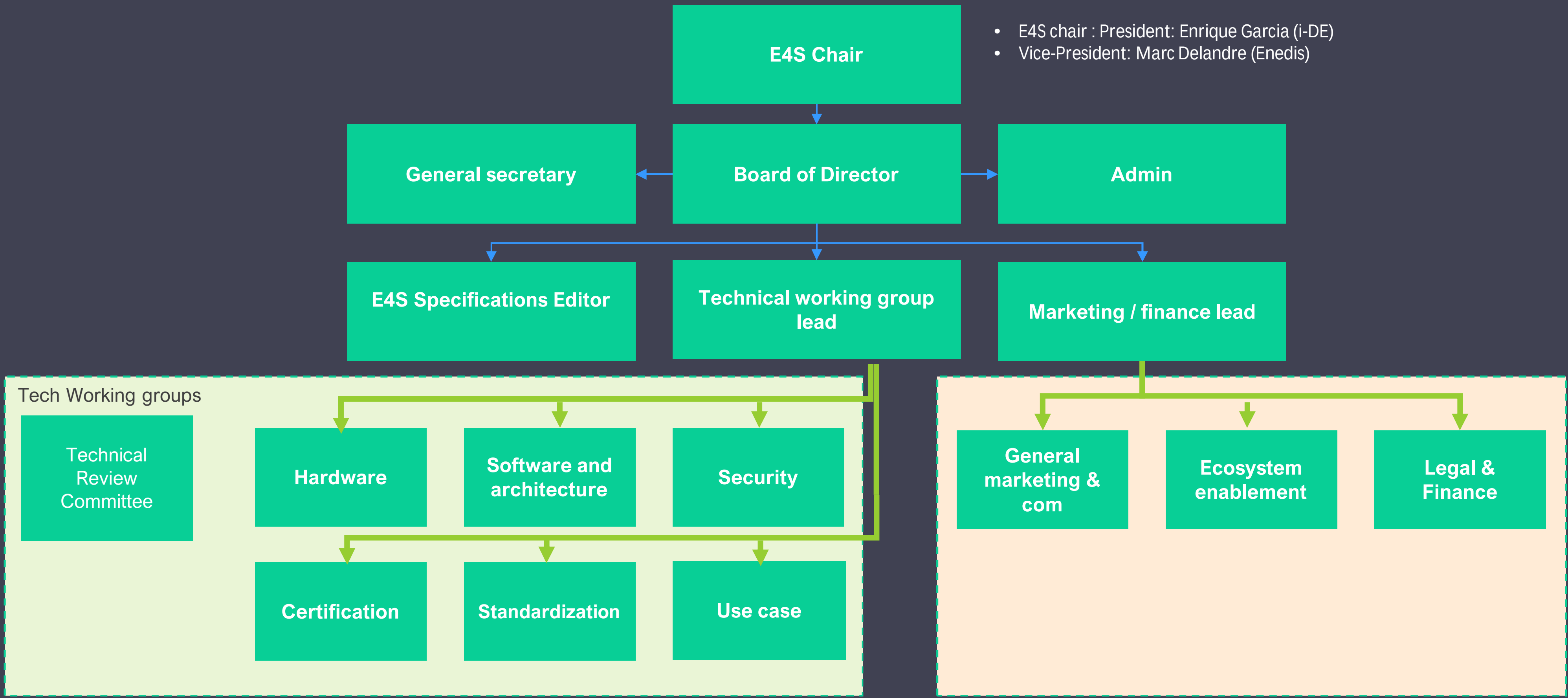
ABB
ADVANTECH Enabling an Intelligent Planet
ariadna
barbara
Capgemini
Circutor
DELL Technologies
ENEDIS
E-REDES
gridspertise accelerating your electric future
HEDNO
HELEN SÄHKÖVERKKO
i-DE Grupo Iberdrola
intel
Kalkitech
edp Labelec
Landis+Gyr
merytronic
minsait An Indra company
ormazabal velatia
Sagemcom
Life Is On Schneider Electric
tecnalia MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
Trialog
ufd Grupo Naturgy
vmware by Broadcom
ZIV Making the Smart Grid Real

E4S Articles of Association highlights

Theme	Key Provisions / Highlights
Form & Name	International non-profit (AISBL) under Belgian law (BCCA), based in Brussels
Purpose	• Promote open, standards-based edge-computing for secondary substations • Develop and certify interoperable specifications • Liaise with industry and academia.
Membership	• **Executive Members** (full rights, voting, Board eligibility), • **Observer Members** (participation without voting). • Admission approved by Board • Membership non-transferable.
Fees*	• Annual membership fees set by General Meeting. * Fees can be adapted • Executive : 3500 euros • Observer : 2000 euros
Board & Officers	• Board (5–15 Directors; **majority DSO reps**) manages operations. • Officers: President/CEO, Vice Presidents, Treasurer, Secretary, and General Secretary.

The E4S alliance Structure & Organization



- E4S chair : President: Enrique Garcia (i-DE)
- Vice-President: Marc Delandre (Enedis)

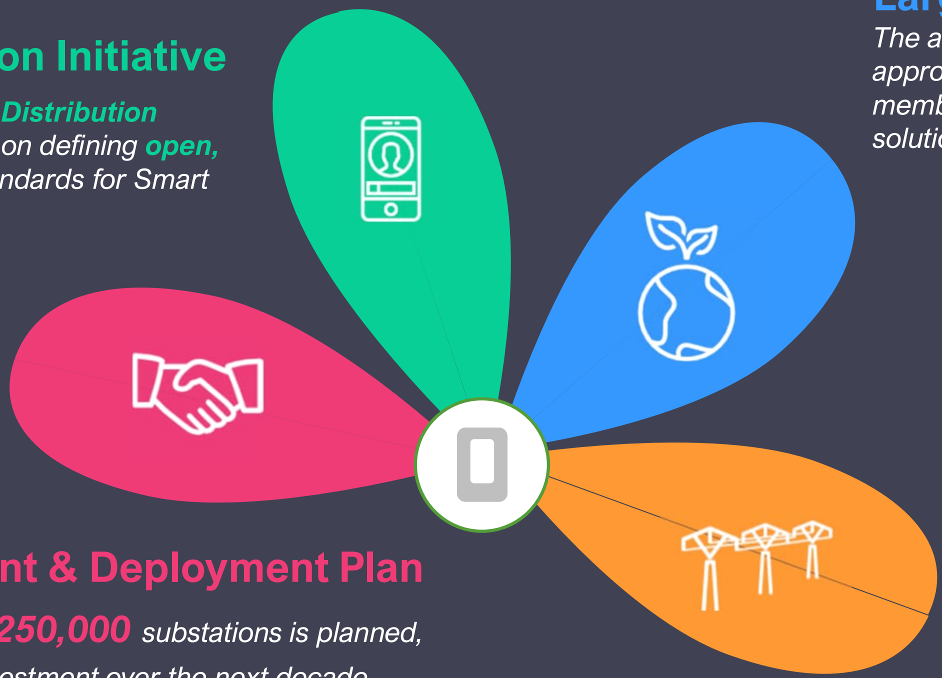
In a Nutshell, Existing Potential Market...

Large Infrastructure Base

The alliance represents a significant installed base, with approximately ***1.2 million secondary substations*** *across member DSOs — highlighting the broad applicability of the solution.*

DSO-Led Standardization Initiative

E4S is a collaborative alliance ***led by Distribution System Operators (DSOs)****, focused on defining* ***open, interoperable, and secure Edge*** *standards for Smart Secondary Substations.*



Strategic Investment & Deployment Plan

A first-phase upgrade of over ***250,000*** *substations is planned, backed by a* ***€657*** *million investment over the next decade, aimed at deploying advanced Edge Node technologies.…*

Market Potential & Scalability

The scale of DSO involvement and infrastructure modernization efforts indicates a ***high potential for solution conversion and adoption****, making E4S a strategic opportunity for vendors and stakeholders.*

05 CALL TO ACTION

E4S benefits from significant demand and widespread applicant engagement

- E4S has received +60 applications to date
- These applications come from a diverse range of companies, notably from Asia and the United States
- Many DSOs across Europe and the U.S. are showing keen interest in E4S

E4S alliance

Join Us!


mashroom6
Q&A
Session
Your Date Here

Panel discussion

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ZIV Making the Smart Grid Real

E4S alliance

Enlit Europe

Thank You!

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