Intelligent Orchestration Platform for Energy

Energy systems are being reshaped by decentralisation, renewables and rising complexity—yet siloed data and reactive operations hinder the fast, coordinated decisions modern grids now demand from each participant.

CHALLENGE

Data and Digital Complexity
Managing large amounts of data from smart meters, IoT devices, AI platforms, and real-time market systems, while ensuring interoperability and situational awareness.

### Fragmented Systems and Silos
Addressing disconnected OT, IT, and IoT systems to support coordinated, context-aware, and quick decision-making.

Need for Intelligence and Orchestration
Implementing a crucial layer that turns scattered data into real-time, coordinated actions across physical assets, digital platforms, markets, and customer behaviours.

SOLUTION

Building on-top of the Utilities' data and core platforms, the **Intelligent Orchestration Platform (IOP)** sets as a modular solution for agentic orchestration over fragmented energy systems, creating a **cohesive, AI-driven ecosystem**. Going from MVP use-cases expanding to wide business value creation, it enables real-time intelligence, cross-domain correlation, predictive analytics, and coordinated action across systems, with integrated **trust and traceability. A graph-based digital twin of the grid** models assets, connections and energy flows, while real-time data enables simulation, automation and human-guided decisions – transforming complex, siloed environments into **intelligent operations.**
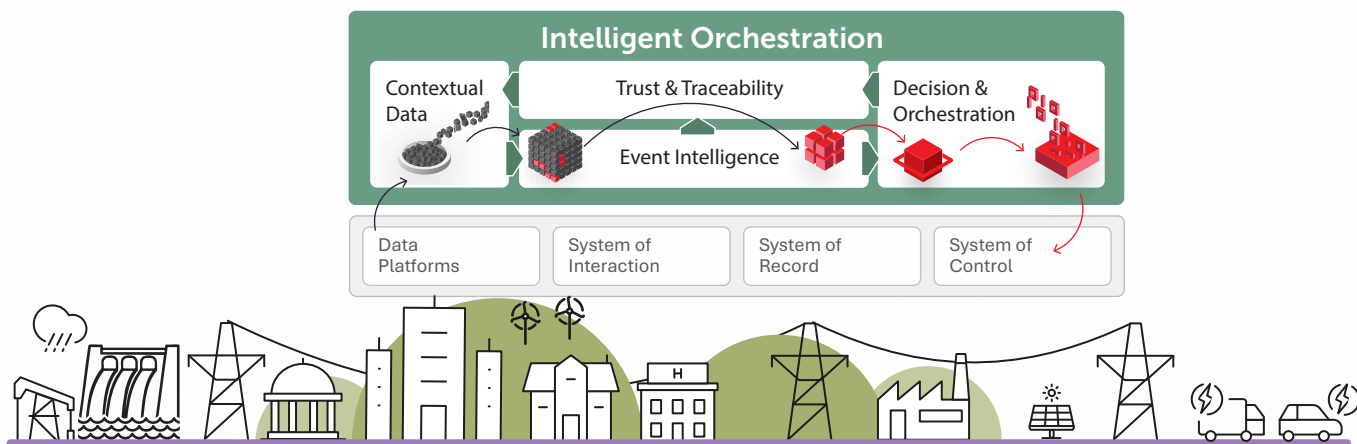
USE CASES

1. Predictive Network Resilience
Grid Guardian Agent
AI and graph intelligence predict grid asset failures, assess cross-network impact in real time, and orchestrate preventive maintenance and switching actions to minimise outages, risk, and repair time.

2. Field Service
First Time Right Agent
Delivers contextual, AI-driven guidance to field crews using grid digital twin insights, asset history, and real-time conditions—improving diagnosis accuracy, reducing repeat visits, shortening repair times, and increasing worker safety

3. Energy Transition
Green Matching Agent
Continuously matches renewable production with contracted green consumption, activating alternative DER or recording compensation needs, while ensuring auditable traceability of energy provenance through a trusted digital notary layer.

4. Flexibility Orchestration
DER & VPP Agent
Aggregates distributed energy resources into dynamic virtual power plants, optimising dispatch and market participation while respecting grid constraints to increase flexibility value and maintain system stability.

Leveraging **Celfocus's proven intelligence and orchestration expertise** from large-scale telecommunications networks, the platform brings the same sophistication to energy grids, helping manage increasingly dynamic and complex systems with confidence.

Making Data Actionable.
www.celfocus.com