

Iskratel Intelligent Application Platform for Energy (IAPE)

Smart digital transformation of Electric Utilities

Benefits

- **No vendor interlocking**
- **Interoperability**
- **High security** for all services
- **CIM** implementation
- **PaaS**

Why Iskratel?

- **Own R&D** and EU-based **manufacturing**
- **First integration pilot** on a national level in EU
- **70 years** of Iskratel experience

In order to implement a successful smart grid concept, you need to combine state-of-the-art technologies and solutions. But they require efficient information exchange among various intelligent devices and information systems within the enterprise, as well as the exchange of data between companies acting in the energy market.

IT systems which support distribution power system operation and control, metering, planning, maintenance, asset management and other processes, suffer from insufficient level of integration and interoperability.

An appropriate integration platform must be applied with a common semantic (Common Information Model), specifically at the information level.

ISKRATEL APPROACH

The world's electricity systems face a number of challenges, including ageing infrastructure, constant growth in demand, new renewable energy sources and increasing penetration of electric vehicles. Topped with the need to improve the security and reliability of supply and to lower the carbon footprint, it is transforming the energy infrastructure landscape.

New emerging energy technologies are penetrating the grid mainly on a low voltage level distribution network, where the infrastructure was not originally designed for such operations. Alongside this, new smart metering infrastructure (AMI) is being rolled out, offering large amounts of network data for

processing in advanced network operations and management.

While transmission systems are already equipped with advanced data infrastructure, distribution systems are still in their early stages.

Integration of ICT with advanced analytics and smart grid technologies offer ways to develop a cleaner, more efficient, affordable and sustainable energy supply.

THE IAPE PLATFORM

Iskratel's solution offers an advanced development platform for next-generation enterprise Internet of Things (IoT) applications and business processes.

The IAPE represents an interoperable IoT platform as a backbone for modern electric utility networks. It is designed with a modular architecture, standardized APIs for applications, standardized data exchange and integration (CIM) and advanced data analytics tools. This enables a simple integration of existing operational intelligence (SCADA, DMS, MDMS etc.), with business intelligence (ERP, Big Data...) and agile development of new energy applications for Smart Grids.

IAPE enables interoperable data exchange and large network data aggregation in a centralized, cloud-based IoT architecture, as well as distributed real-time network data processing for dynamic network control. The platform represents an interoperable backbone infrastructure for utility smart grids.

Stakeholders

• Utility network operators

Upgrade existing infrastructure and integrate new emerging technologies.

• Energy traders & retailers

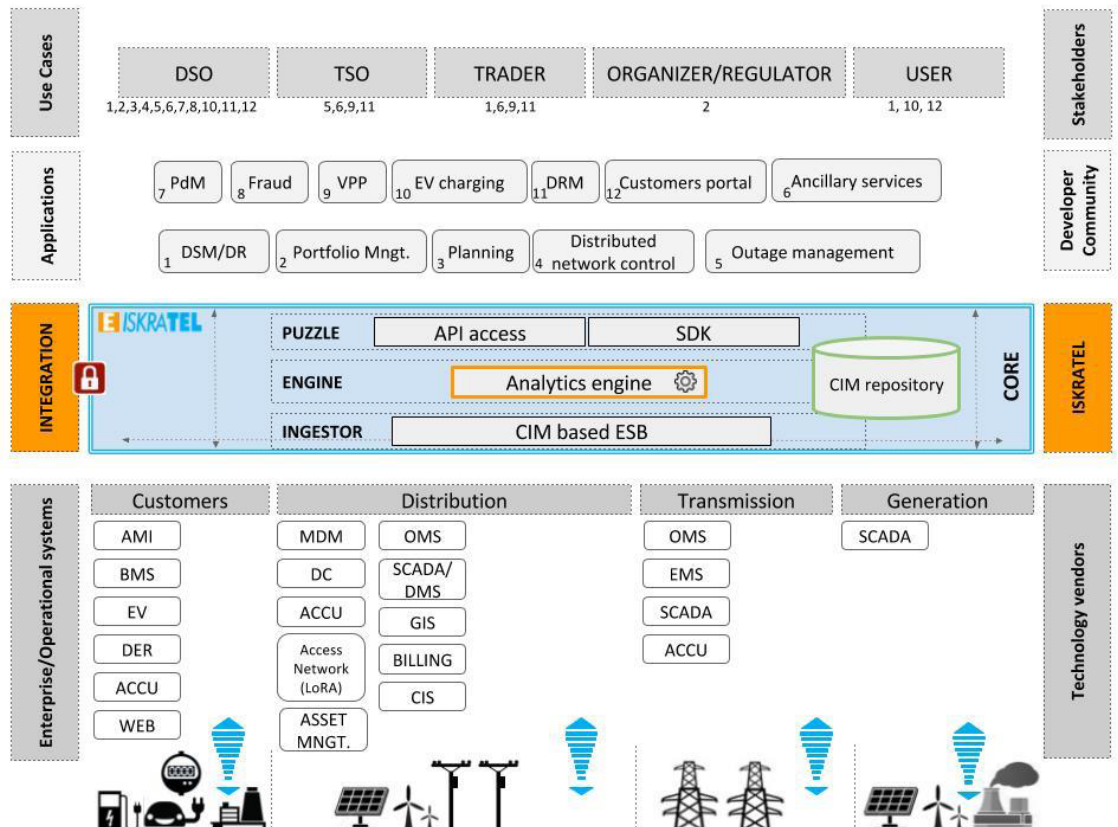
Load aggregation and energy consumption forecasting.

• Technology vendors

Backbone for component integration – a plug-and-play ICT infrastructure.

• Developers, Start-ups, SMEs

IAPE enables rapid testing/development and scalable deployment.



CIM - COMMON INFORMATION MODEL

The CIM defines a common language and basic ontology for aspects of the electric power industry data exchange. Applying CIM profiles and interfaces in basic integration platform (ESB) is one of the key advantages of the IAPE.

ENTERPRISE SERVICE BUS (ESB)

Utility ESB integrates all enterprise ICT systems, while offering standardised protocols for data exchange (CIM). Furthermore, the ESB is equipped with CIM-standardized APIs and CIM profiles repository to support an individual use-case (smart grid application). The main focus of the CIM interface is interoperable data exchange.

BENEFITS

Iskratel IAPE meets the challenges of digitalising the common energy infrastructure:

- **Interoperable** integration of utilities' legacy enterprise ICT systems for accessing network data from various resources.
- Full stack **security** and **reliability**.
- Integration of large network sensor data and distributed processing.
- **Large network data** for real-time operation – big data analytics.
- **Data driven** network operation – smart energy infrastructure.

Iskratel's IAPE represents an interoperable integration backbone for the smart grid, providing a lean and modular solution, with no vendor lock-in. It enables reliable technology and resilient integrated security, and offers a turnkey solution within a partnership ecosystem (vendors and engineering) and development ecosystem (APP).

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