Innovative platform for real-time gas network management

Pietro Fiorentini

OVERLAND KARMA

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OVERLAND KARMA is the software platform designed for **centralised control**, **real time supervision** and **structured data logging** from systems distributed across the territory.

The platform enables the **collection, normalisation, analysis and** visualisation of data acquired from **RTUs, PLCs, field sensors and field sensors**.

OVERLAND KARMA is supported by **Pietro Fiorentini** integrated support service and is designed for high performance, safety and scalability.

Technical operational staff

Control Room and Operation Manager

Automation / SCADA / ICT managers

Functions	Description
Structure and organisation of systems	**Multilevel architecture** fully configurable, with **geographic visualisation** of systems and devices installed in the field. Intelligent **search and filter** functions by area, system or type.
Data collection and normalisation	**Acquisition of** process data from RTUs, PLCs, field sensors via **standard protocols**. Data are normalised, logged and made available on interactive dashboards and synoptics.
Customisable synoptics and dashboards	**Fully configurable dashboards** by system or measuring point, with interactive objects showing **network parameters**. Users can independently create or edit synoptics thanks to a **library of dedicated objects**.
Advanced RTU diagnostics	**Real-time monitoring** of operational status, battery level, signal quality and data reliability of each device. Automatic differentiation between **remote and battery powered RTUs**, with intelligent notifications and option of **sending** voice alerts or SMS.
Alarm and notification system	**HyperAlarm module** with configuration of static or dynamic threshold alarms, severity levels and customisable notification channels (e-mail, SMS, Telegram bot, voice calls) to **on-call groups**, ensuring **targeted and timely management of anomalies**.
Reporting and advanced data analysis	Generation of **customised reports** with filters by area, system or period. Dashboards and graphs enable **comparisons between systems, RTUs or time intervals**, monitoring performance, service levels and operational anomalies.

Table 1 Functions

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Architecture and distribution

OVERLAND KARMA is available both as a cloud service (**SaaS**) and as software installed at the customer's premises (**On Premise**). In both cases, it is accessible via a normal web browser, without the need to install applications on the devices.

The platform is designed to offer high scalability, guarantee service continuity, and ensure **maximum operational reliability**, thanks to its containerised microservices architecture.

Software updates are released in a controlled manner, **with no impact on operations**. Scheduled maintenance is also provided, aimed at maintaining consistently high performance and ensuring the full safety of the installed environment.

Overland Karma: optional modules

EP-Manager Module for the management of data acquired from end-of-line monitoring devices. Ability to generate reports according to the Directives of ARERA Resolution 569/2019/R/gas

Overland Karma: competitive advantages

Native **integration** with **SCADA** and **GIS,** via API RESTful and MQTT

Modular and scalable architecture, expandable without impacting existing configurations

Maximum operational reliability thanks to **automatic updates** and guaranteed continuity.

Safety by design, developed according to standards **IEC 62443** and **ISO/IEC 27001**

Interoperability with field devices via standard protocols and open APIs

Access from anywhere with responsive web interface, also optimised for mobile use.

Multi-language and multi-time zone support for management across several territories.

Dedicated **technical support** and **continuous training**

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