



MAIA Cloud: secure platform for remote VPN access, device management and system management

Controls

MAIA Cloud

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Advantages

The growing connectivity of industrial plants, energy monitoring systems and building infrastructures increases the need for secure, reliable and scalable remote access.

MAIA Cloud provides encrypted VPN connectivity between users and field devices, enabling operators to securely access gateways and connected installations from anywhere.

By simplifying remote connectivity while ensuring high cybersecurity standards, MAIA Cloud helps reduce operational complexity, maintenance activities and service costs.

Secure and simplified remote connectivity

MAIA Cloud is a cloud-based remote access platform designed to provide VPN connectivity between users and distributed field installations.

It enables system integrators and operators to remotely access gateways and connected devices without deploying or maintaining dedicated VPN infrastructure.

Delivered as a Platform-as-a-Service (PaaS) solution, MAIA Cloud combines simplified connectivity with high cybersecurity standards for industrial, energy and building automation applications.



Our strengths

Secure VPN connectivity

MAIA Cloud establishes encrypted VPN tunnels between users and distributed installations, ensuring secure communication across public networks.

Cloud-based platform with no infrastructure

MAIA Cloud is delivered as a cloud-based platform, eliminating the need to install or maintain dedicated VPN servers. Users securely access installations through standard configuration tools or web applications.

This approach reduces infrastructure complexity and operational costs.

Centralized access to distributed installations

MAIA Cloud enables system integrators and operators to remotely access gateways and connected devices across multiple installations through a centralized cloud platform.

Reduced operational and maintenance costs

Remote connectivity enables faster diagnostics, configuration updates and troubleshooting without onsite interventions, reducing travel time and service delays.

MAIA Cloud – Secure remote connectivity platform

Carlo Gavazzi's EDGE + PaaS solution for energy monitoring and building automation

- Secure remote access to gateways and field devices through encrypted VPN tunnels.
- Cloud-based platform enabling safe connection to distributed installations from anywhere.
- No dedicated VPN servers are required thanks to the SaaS architecture and centralized web portal.
- Centralized user management with authentication and role-based access control.
- OTA (Over The Air) updating for an easy, quick and effective fleet management
- Easy integration with Carlo Gavazzi gateways and connected field devices.



User manual

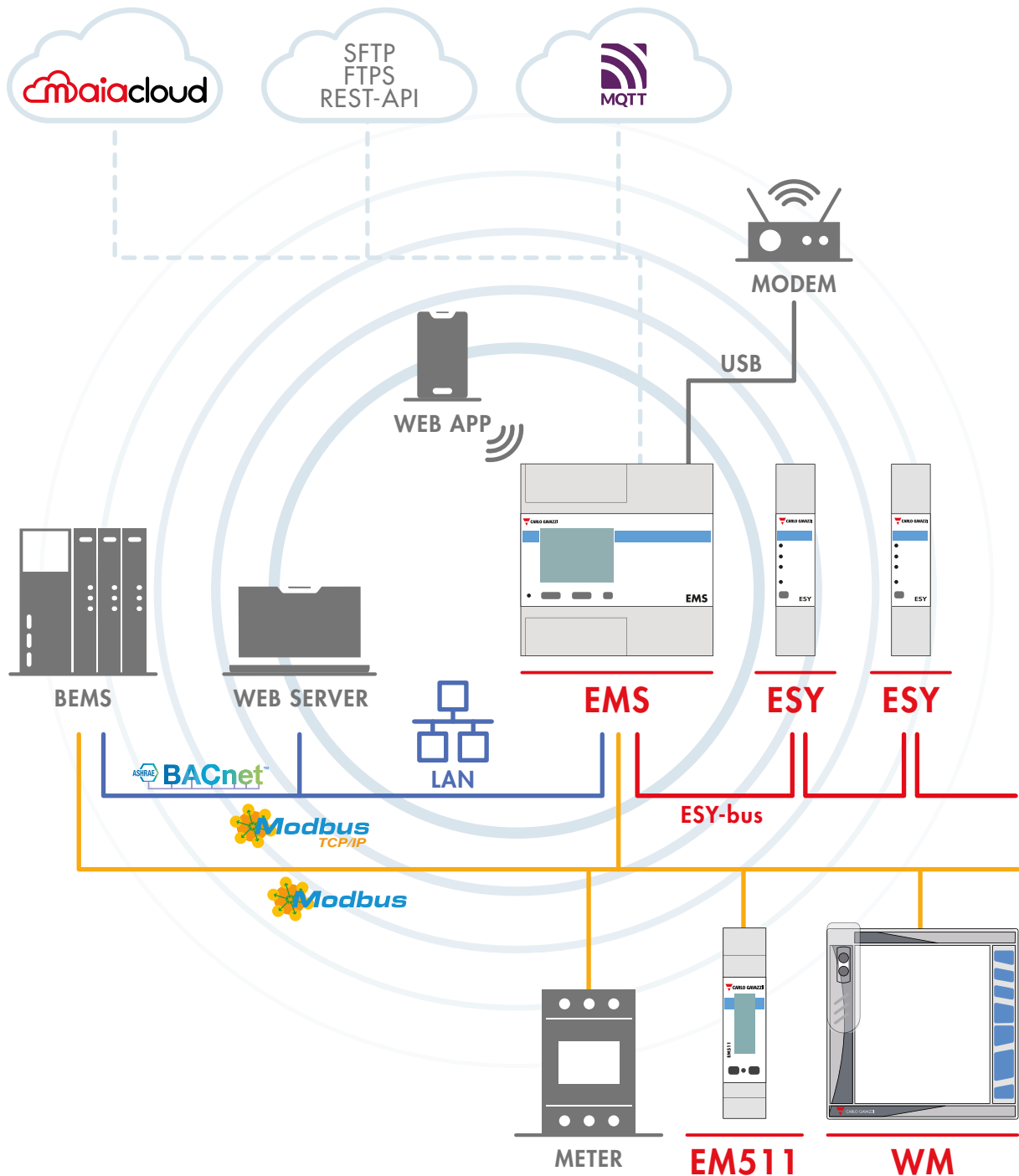


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MAIA Cloud architecture

Secure cloud infrastructure connecting users, gateways and monitored systems



How the MAIA Cloud architecture works

Secure connectivity from cloud services to edge gateways and field devices

The diagram shows how MAIA Cloud enables secure connectivity between users, cloud services and field installations. Through the platform, operators can remotely access edge gateways such as EMS or UWP to monitor systems, configure devices and manage installations.

The architecture also supports integration with external applications via MQTT and REST APIs, while field devices communicate with the gateways through industrial protocols such as Modbus and BACnet.

User access and remote configuration

Users can securely access installations through configuration software, engineering tools or web applications. Through the MAIA Cloud platform, system integrators and operators can remotely configure gateways, manage devices and perform maintenance activities without direct access to the site.

Secure cloud connectivity

MAIA Cloud acts as a secure intermediary between users and field installations. The platform establishes encrypted VPN tunnels that protect communication between remote users and connected devices, ensuring safe data exchange and controlled system access.

Edge gateways and field devices

At the installation level, Carlo Gavazzi edge devices such as UWP gateways and EMS systems connect meters, machines and field devices within the local network. Through industrial communication protocols such as Modbus and BACnet, the system can integrate with BEMS platforms and building automation systems.



MAIA Cloud

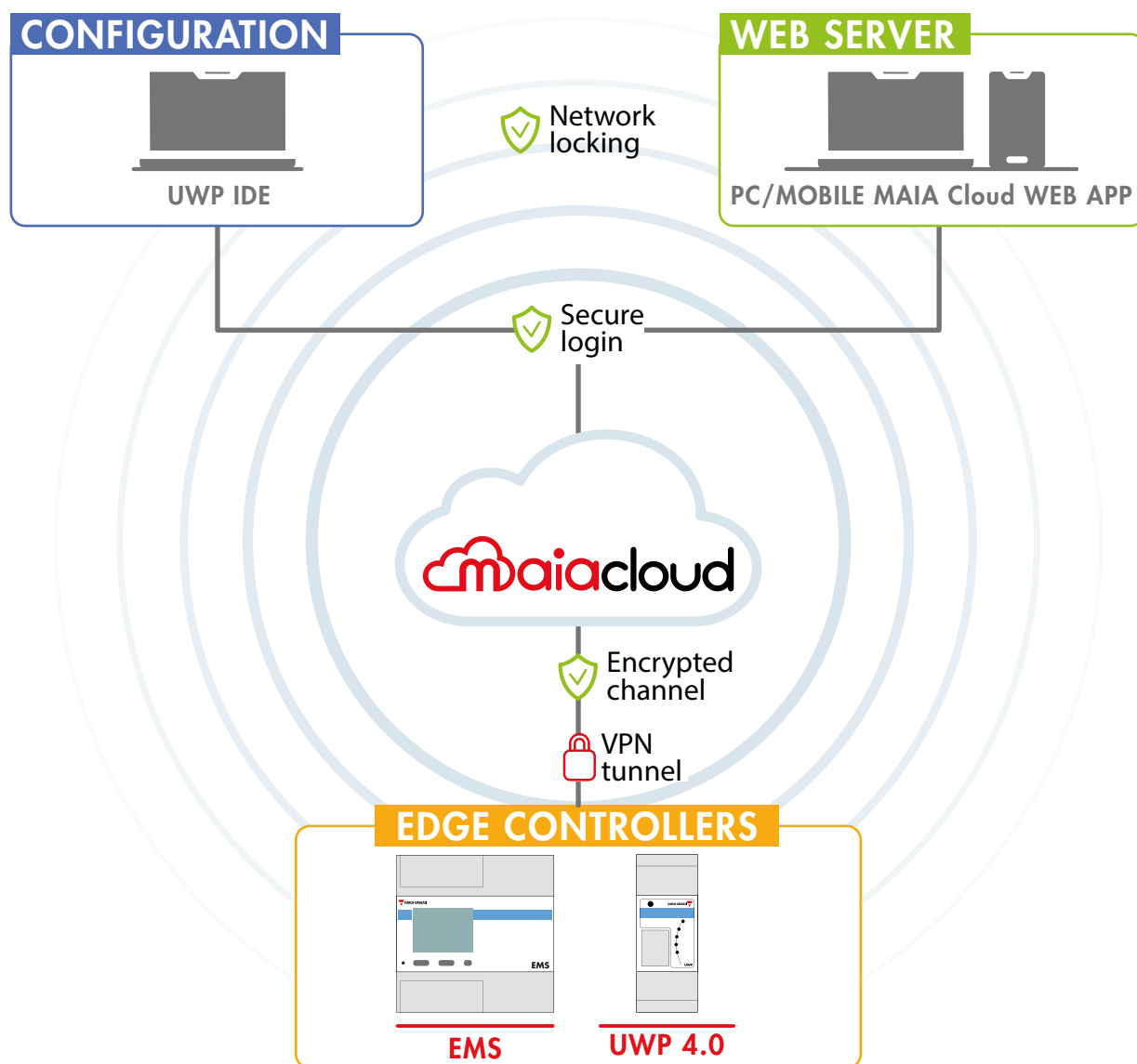
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Cybersecurity and secure connectivity

Secure communication between users, cloud services and field installations

How the MAIA Cloud architecture works

MAIA Cloud enables secure connectivity between users, cloud services and field installations. Operators remotely access edge gateways such as EMS or UWP to monitor systems, configure devices and update firmware.



Secure architecture and data protection

Encrypted communication and secure cloud-to-edge connectivity

Cybersecurity and secure connectivity

MAIA Cloud is designed according to modern cybersecurity principles, ensuring secure communication between users, cloud services and field installations.

Encrypted VPN communication

All communication between the cloud platform, gateways and connected devices is transmitted through encrypted VPN channels.

Secure authentication and access control

Role-based access control ensures that only authorized users can interact with the system, while administrators manage permissions and visibility.

Protected cloud and edge architecture

Cloud services and field networks are logically separated, ensuring reliable communication and infrastructure protection.



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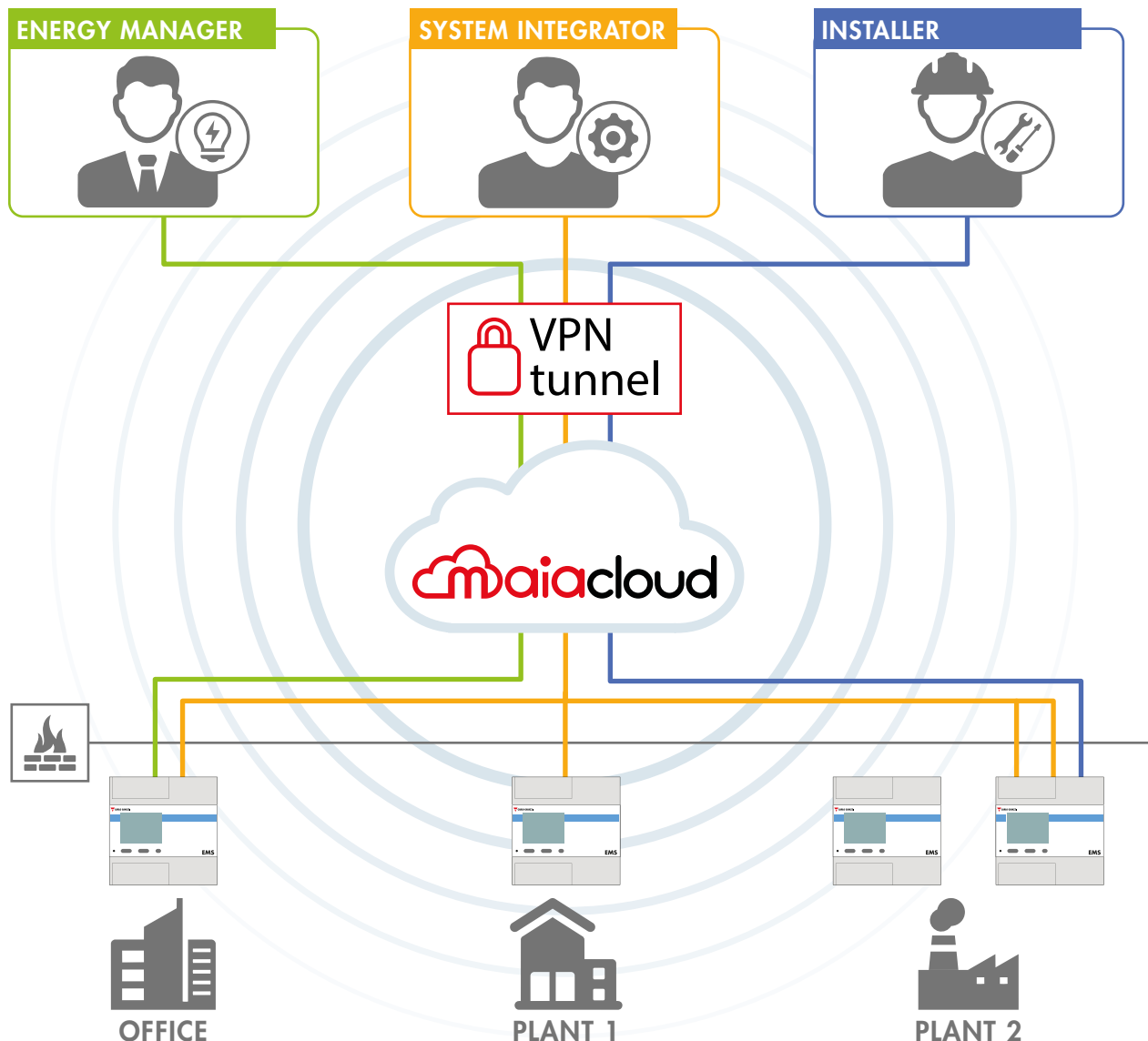
Secure cloud connectivity

Protected remote access to gateways and field installations

Secure communication architecture

The diagram illustrates how MAIA Cloud enables secure remote access to distributed installations through encrypted VPN communication. Users connect via configuration tools or web applications and authenticate securely to the MAIA Cloud platform.

Through the encrypted VPN tunnel, operators can securely access gateways such as EMS or UWP controllers and interact with devices installed in the local network.



Secure VPN remote access

Secure connectivity for monitoring, configuration and maintenance

Remote data access

MAIA Cloud enables secure remote access to operational data from distributed installations. Through the encrypted VPN connection, authorized users can monitor energy consumption, system performance and device status without direct access to the site.

Remote configuration and maintenance

System integrators and operators can remotely configure devices, update parameters and manage installations through the secure MAIA Cloud platform. This simplifies system management and reduces the need for on-site interventions.

Remote troubleshooting

Through the VPN connection, technicians can remotely diagnose issues, access system logs and verify device operation. This enables faster troubleshooting and minimizes downtime in critical installations.

Fleet Management upgrade

MAIA Cloud enables centralized management of multiple gateways and installations. Operators can deploy updates, monitor devices and manage distributed systems from a single secure platform.

Cybersecurity certification – UL IoT Security Rating

MAIA Cloud is designed to meet modern cybersecurity requirements for connected industrial systems. The platform supports secure communication, encrypted VPN connectivity and controlled access to installations. MAIA Cloud complements the UL IoT Security rating of the device with an additional guarantee of cybersecurity and secure remote access for industrial, energy and building automation applications.



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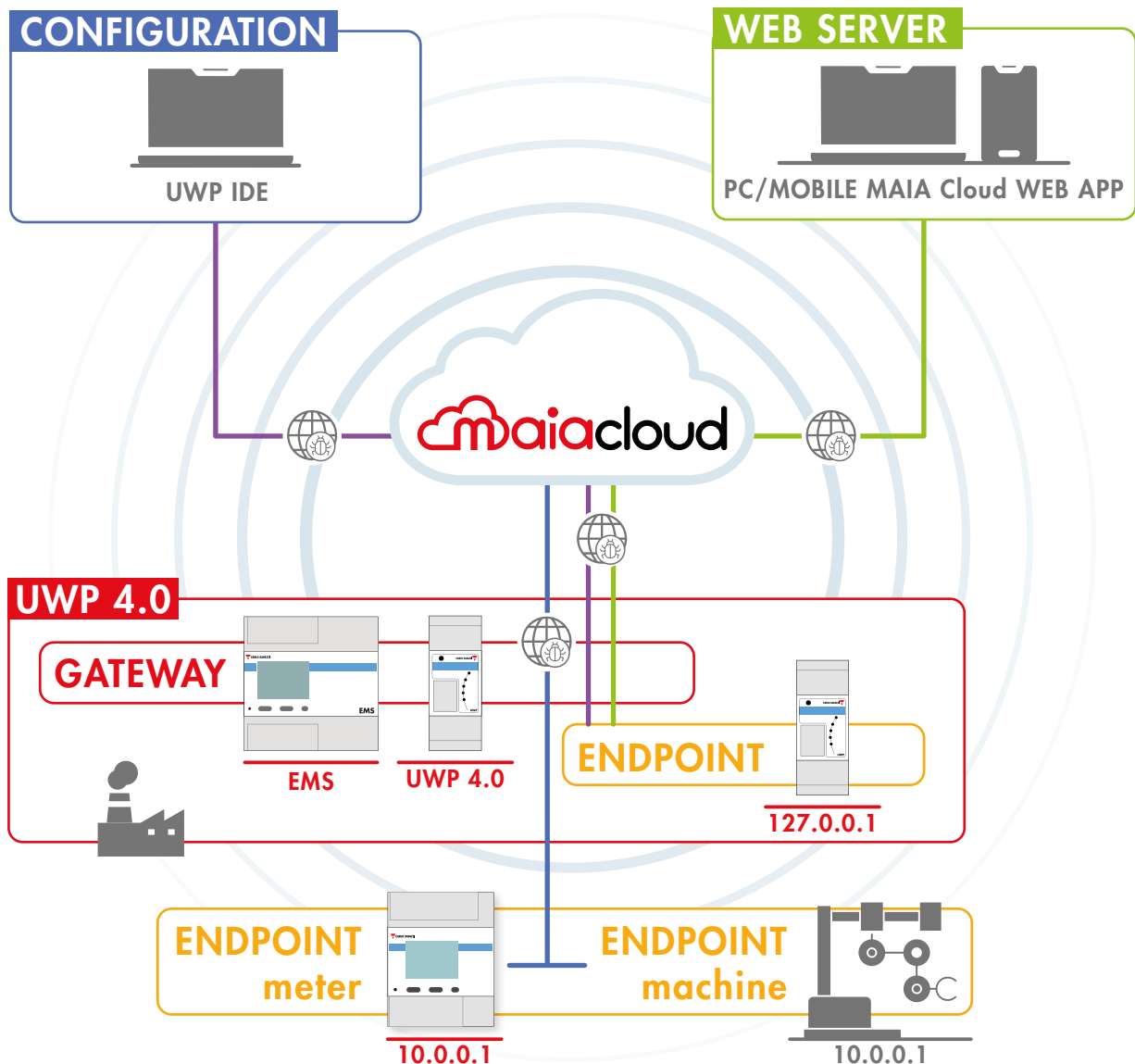
Gateway and device connectivity

Secure communication between cloud applications, edge gateways and field devices

System connectivity architecture

The diagram illustrates how MAIA Cloud connects user applications, gateways and field devices through a secure cloud infrastructure. Users access the platform through configuration tools or web applications, while edge gateways such as EMS or UWP enable communication with devices installed in the local network.

Through this architecture, operators can securely access endpoints, monitor systems and manage installations from a centralized cloud platform.



Connecting gateways and field devices

Remote monitoring and control of field installations

Cloud-based gateway access

MAIA Cloud provides secure connectivity between user applications and field installations. Through the platform, operators can access gateways such as EMS and UWP controllers to monitor systems, configure devices and manage distributed installations from a centralized environment.

Edge gateway communication

Edge devices such as EMS and UWP gateways act as a bridge between cloud services and field installations. These gateways collect data from connected devices and enable secure communication with the MAIA Cloud platform.

Connection to field endpoints

Gateways provide connectivity to field devices such as meters, sensors and machines installed within the local network. Through these endpoints, operators can access operational data, monitor performance and interact with connected systems.

Centralized monitoring and management

By connecting gateways and endpoints to the MAIA Cloud platform, operators can manage multiple installations from a single interface. This enables centralized monitoring, remote configuration and efficient management of distributed energy and automation systems.



MAIA Cloud is designed as an open integration platform that allows third-party software and applications to operate on reliable Carlo Gavazzi edge hardware while maintaining their own functionalities and services. By combining trusted hardware platforms such as EMS and UWP controllers with MAIA Cloud secure remote connectivity, users can create operational ecosystems more quickly and cost-effectively.

Through EMS and UWP edge gateways, data from meters, sensors and automation devices installed in the field can be collected, managed and securely exchanged with external software platforms, supervisory systems and enterprise applications for monitoring, analytics and fleet management.

Secure remote connectivity for third-party applications

MAIA Cloud enables secure encrypted VPN connectivity between users, third-party applications and distributed installations. This allows operators and system integrators to remotely access field devices and gateways while benefiting from a cybersecurity-focused infrastructure without deploying dedicated VPN servers.

Industrial protocol connectivity

At installation level, EMS and UWP edge gateways communicate with field devices using widely adopted industrial protocols such as Modbus TCP, Modbus RTU and BACnet. In addition, the ESY-bus enables direct communication with compatible Carlo Gavazzi devices, simplifying integration within energy monitoring and building automation systems.

Applications and use cases

Remote monitoring and management for connected installations

MAIA Cloud enables secure remote monitoring and management of distributed installations across energy, building and industrial environments. By connecting gateways, devices and applications through a centralized cloud platform, operators can access operational data, configure systems and maintain installations from anywhere.

The platform simplifies the management of multiple sites while ensuring secure communication and seamless integration with existing monitoring and automation systems.

Energy monitoring systems

MAIA Cloud enables remote supervision of energy meters and monitoring devices installed across facilities. Operators can access consumption data, analyze system performance and monitor energy usage in real-time.

Building automation systems

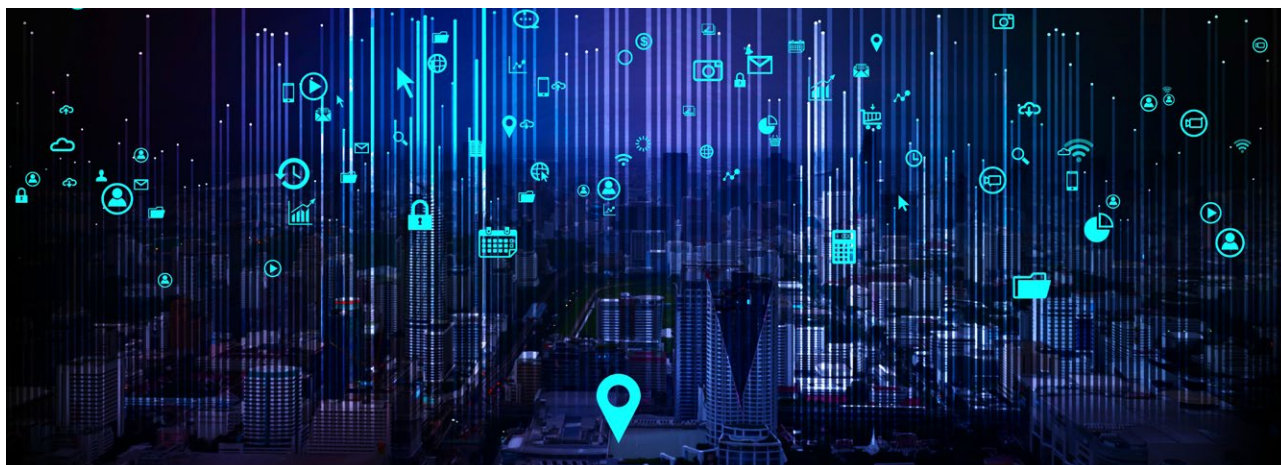
Through integration with building management systems, MAIA Cloud allows centralized monitoring and management of HVAC, lighting and other building infrastructures connected through gateways and automation devices.

Multi-site infrastructure management

MAIA Cloud simplifies the supervision of distributed installations across multiple locations. Operators can monitor gateways, devices and system performance from a single platform, improving operational visibility and efficiency.

Remote maintenance and support

System integrators and service teams can remotely access installations to perform configuration, diagnostics and troubleshooting. This reduces the need for on-site interventions and enables faster response to operational issues.



Licensing concept

Activation Key

Every EMS, UWP4, or UWP-DLB device includes a unique Activation Key

The key is:

- Stored inside the device memory.
- Printed on a label included in the product box.

If the user is new to MAIA Cloud, the activation key allows the user to:

- Register on the MAIA portal.
- Create a new organization.

An organization represents the company account and contains:

- Devices.
- Users.
- Resources.
- Service permissions.



Device Registration

The basic MAIA organization includes a structure to manage up to 50 devices, 50 users and 50 sub-organizations. This ecosystem is expandable using additional resources.

MAIA Services

MAIA Cloud provides two independent services:

- VPN Service: for remote access for commissioning, diagnostics, configuration, and reporting.
- Fleet Management: firmware update and centralized fleet management.

The services can be used separately or together.

Licensing concept

Resources and Licenses

MAIA services use a resource-based licensing model.

Resources work like virtual wallets inside the organization, to be used for obtaining VPN months and/or Fleet credits for the fleet management service. Resources are added by purchasing dedicated license codes:

VPN Licenses

Licenses with code format UWP-LICENCE-Mxxxx add VPN resources.

Each time a device uses the VPN service, the platform consumes VPN resources.

Example:

<i>Devices</i>	<i>Annual VPN Requirement</i>
<i>2 devices</i>	<i>24 VPN months</i>
<i>15 devices</i>	<i>180 VPN months</i>

This assumes at least one VPN connection per month for each device.

Fleet Management Licenses

License with code format UWP-LICENCE-300C adds 300 Fleet Management credits.

The Fleet Management service is enabled through the MAIA Portal App Store.

- Initial Activation

The Fleet Management app costs 250 credits (one-time activation).

After activation, Fleet Management is enabled for 1 year up to 50 devices.

- Renewal

After the first year each managed device costs 12 credits per year Equivalent to 1 credit per month per device

Example:

<i>Managed Devices</i>	<i>Required Credits per Year</i>
<i>10 devices</i>	<i>120 credits</i>
<i>25 devices</i>	<i>300 credits</i>



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Future trends in connected energy and building infrastructures

Why MAIA Cloud

A secure and scalable platform for connected energy and building systems

Cybersecurity and secure connectivity

MAIA Cloud is designed according to modern cybersecurity principles, ensuring secure communication between users, cloud services and field installations.

Centralized system management

Operators can monitor, configure and maintain multiple installations from a single cloud environment, simplifying the management of distributed infrastructures and fleet management.

Scalable and future-ready

MAIA Cloud is designed to support expanding installations and evolving digital infrastructures, enabling organizations to build connected and scalable energy and automation systems.

Contact us now!

We are committed to delivering innovative, reliable, and energy-efficient solutions that empower you to perform at your best.

Our dedicated team of experts is ready to understand your needs and provide tailored support at every stage of your project.

Let's shape the future of automation and energy management together. Get in touch with us today and take the first step toward smarter, more sustainable performance.

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