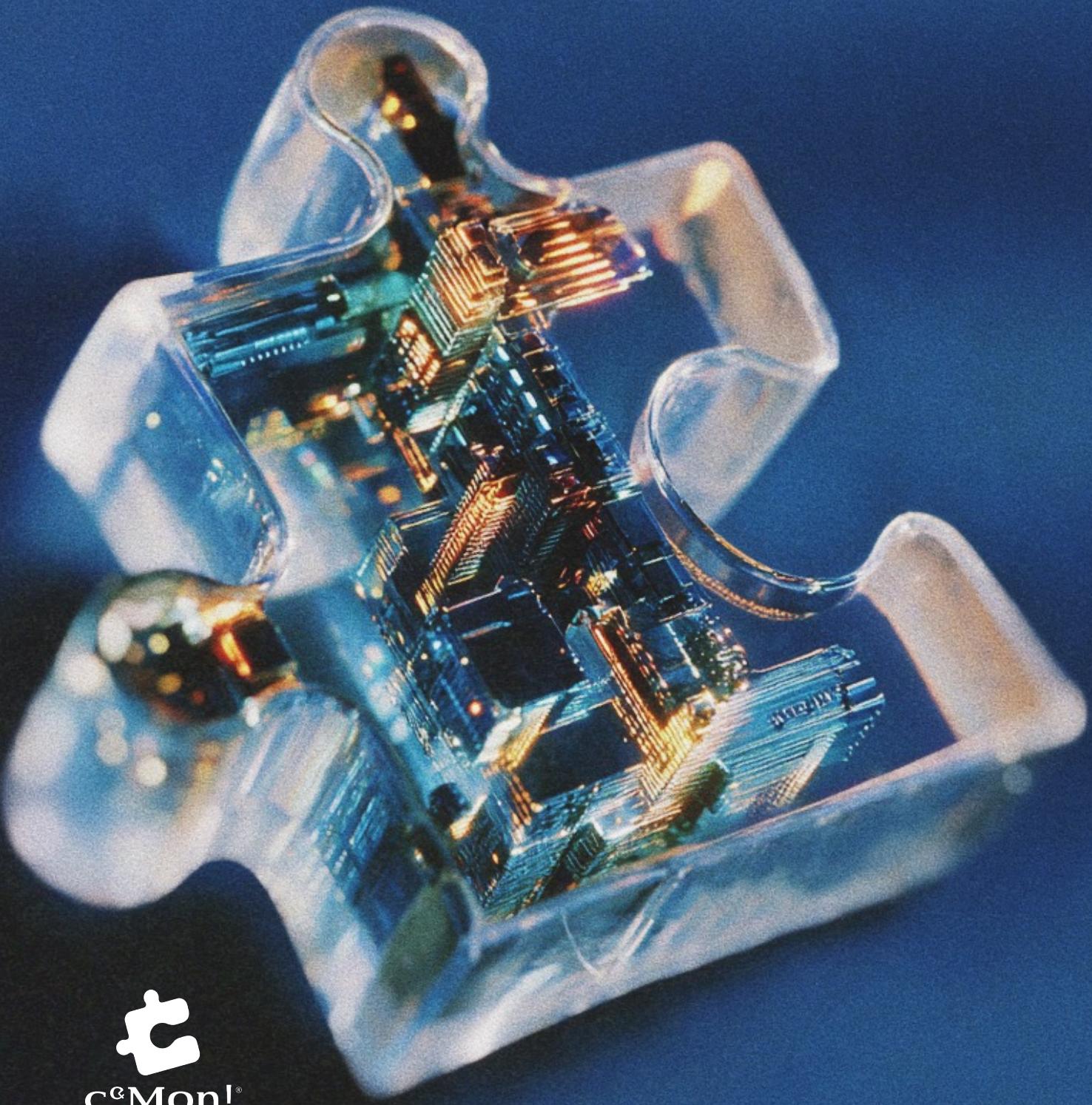


White Paper

Intelligent Platform for Building Management and Energy Efficiency

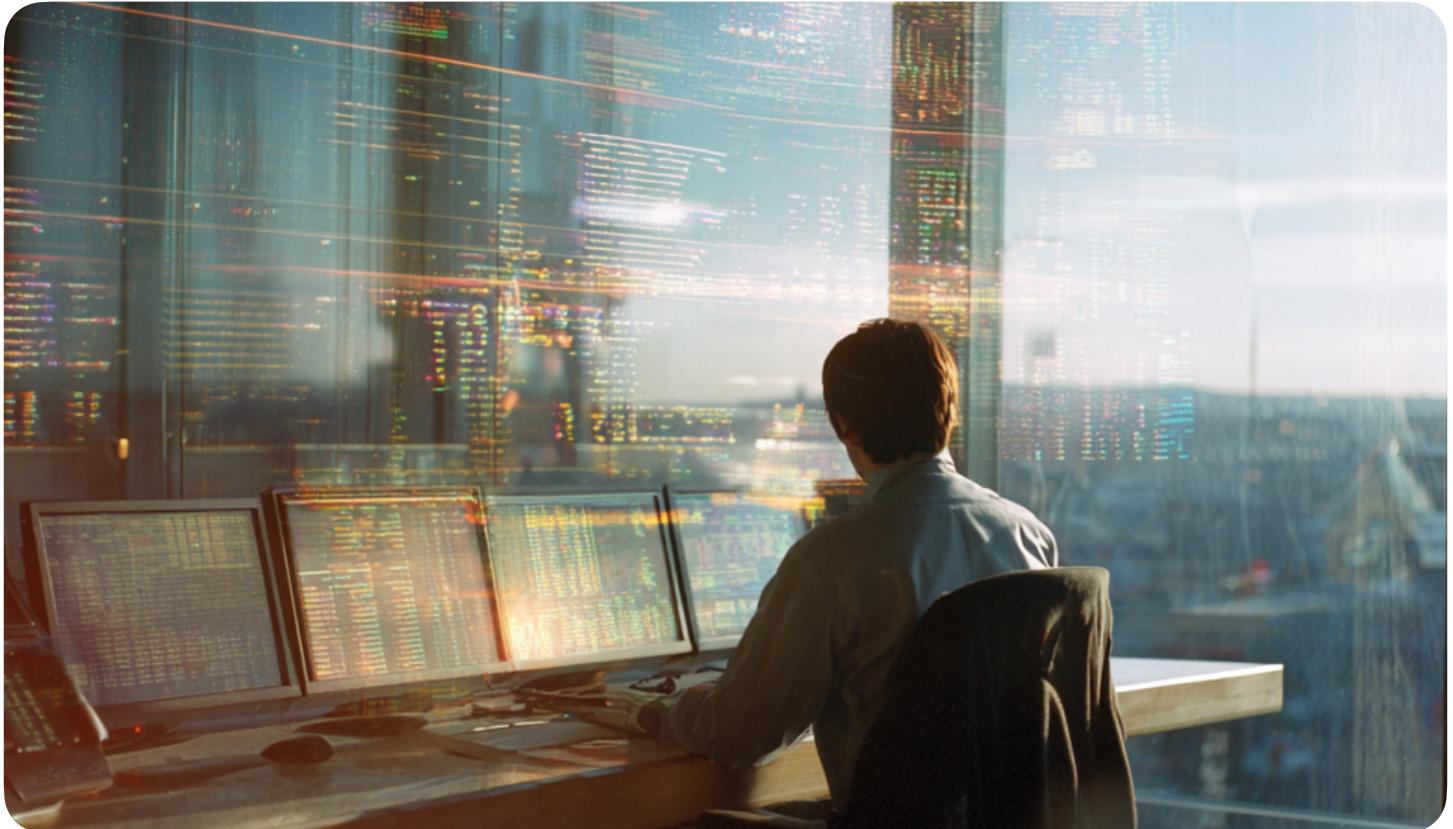


01	INTRODUCTION	3
02	ABOUT THE C&MON! SYSTEM PLATFORM	4
03	DETAILED FUNCTIONAL DESCRIPTION OF THE C&MON! SYSTEM	10
04	BENEFITS OF IMPLEMENTING IDOMUS C&MON! SYSTEM	15
05	USE CASES AND RESULTS	20
06	CONCLUSION	21

Modern buildings and industrial facilities are becoming increasingly complex and energy-demanding. Owners, operators, and tenants require effective tools for monitoring, controlling, and optimizing various engineering systems and resource consumption.

Traditional BMS (Building Management Systems) often face limitations in scalability and integration with IoT devices.

iDomus provides an intelligent solution – the C&Mon! System, which centralizes the management of all critical building systems into a single platform, supported by its proprietary IoT infrastructure.



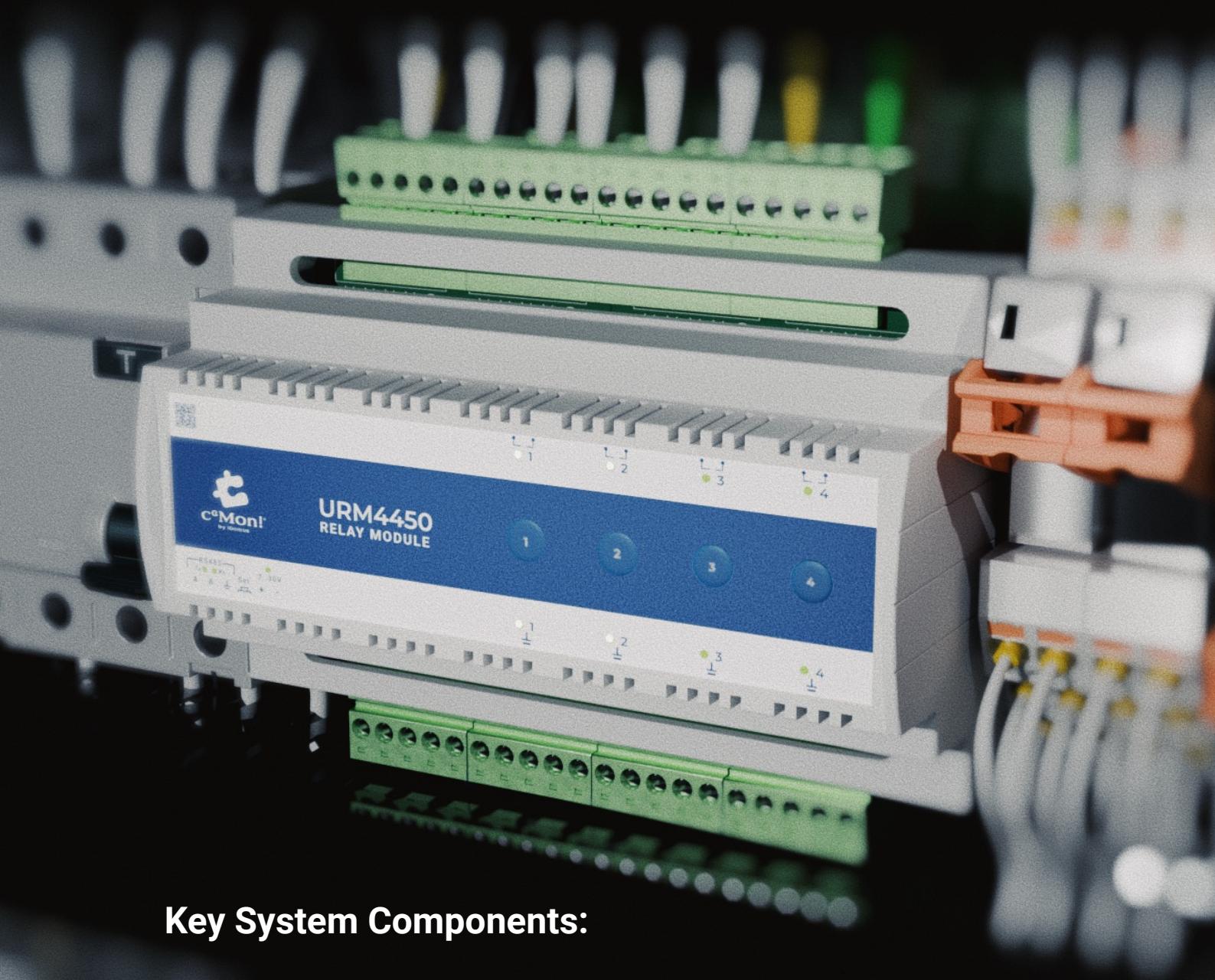
The C&Mon! System addresses these challenges by delivering a unified platform for managing engineering systems and enhancing energy efficiency.

02 ABOUT THE C&MON! SYSTEM PLATFORM

C&Mon! System (Control & Monitoring System) is a full-featured, next-generation IoT platform designed for centralized monitoring, management, and automation of building engineering infrastructure. It operates efficiently across all types of facilities – from small offices to large industrial complexes – integrating all systems into a unified digital environment.

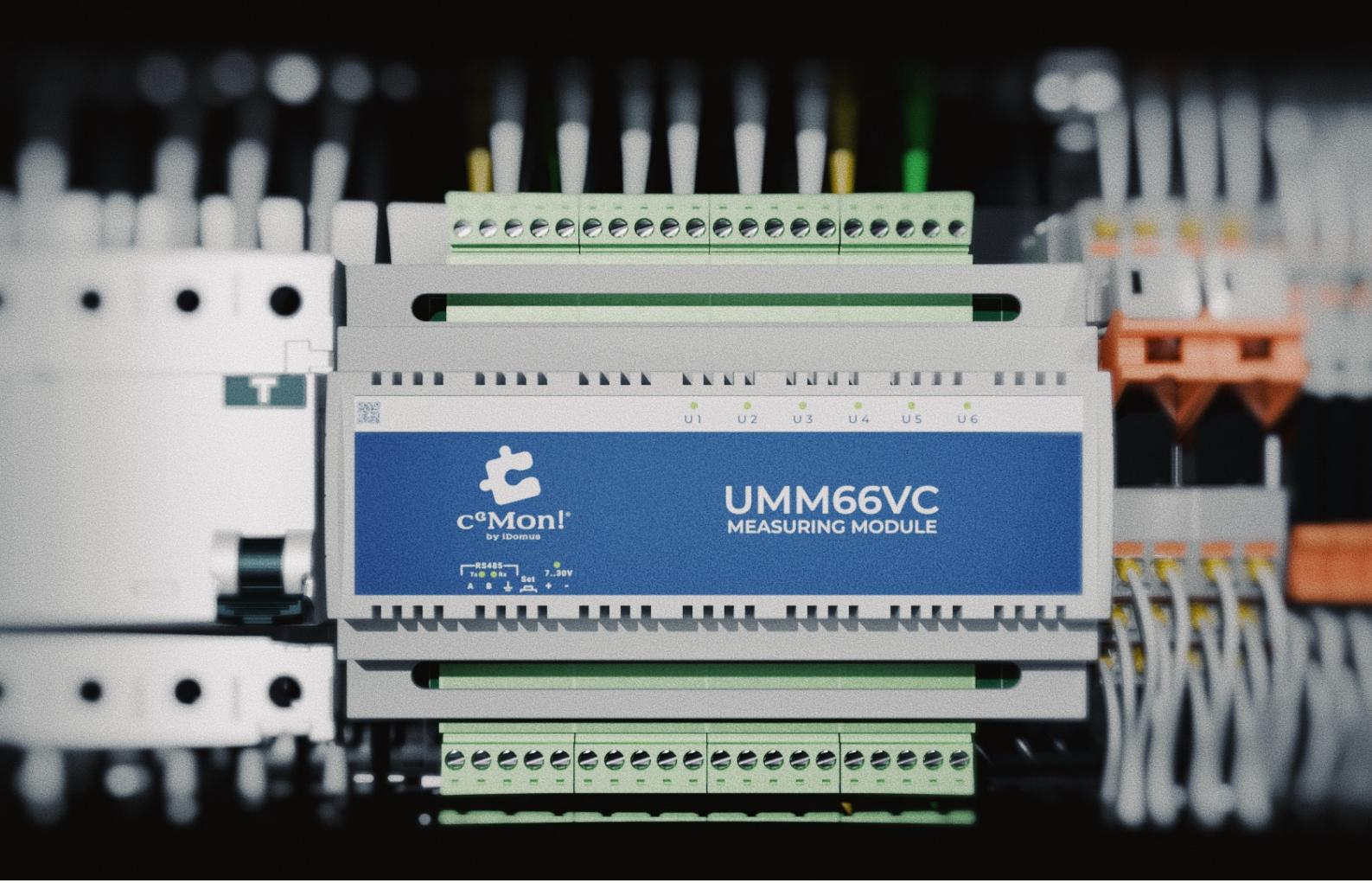
The platform enables comprehensive dispatching, resource consumption monitoring, rapid incident response, and remote management of all critical building processes through an intuitive, user-friendly interface.





Key System Components:

1. **C&Mon! Center IoT Platform:** central hub for data acquisition, analytics, management, and integration with external services.
2. **C&Mon! Branded Equipment Line:**
 - Universal relay modules for load management (lighting, outlets, contactors, motors, etc.);
 - Measurement and monitoring modules for current, voltage, and power parameters;
 - Industrial thermostats and control devices for HVAC systems.



3. **WUM (Wireless Universal Multi-Mesh) Gateways, Data Hubs, and Interface Modules** for connecting heterogeneous systems – ensuring reliable communication via LPWAN, LoRa Mesh, Wi-Fi Mesh, Zigbee Mesh, Ethernet, RS-485, LTE/4G/2G, and other industrial protocols.
4. **WUM Radio Modules** for reading consumption data from smart meters (electricity, water, heat, gas).



Functional Capabilities

1. Online Management and Monitoring

- Scalable architecture for managing from tens to hundreds of facilities;
- Centralized control via cloud or local interfaces.

2. Energy Efficiency Control

- Data collection from smart meters;
- Consumption analytics by zones, rooms, and devices;
- Integration with reporting and analytics platforms.

3. Integration with Building Engineering Systems

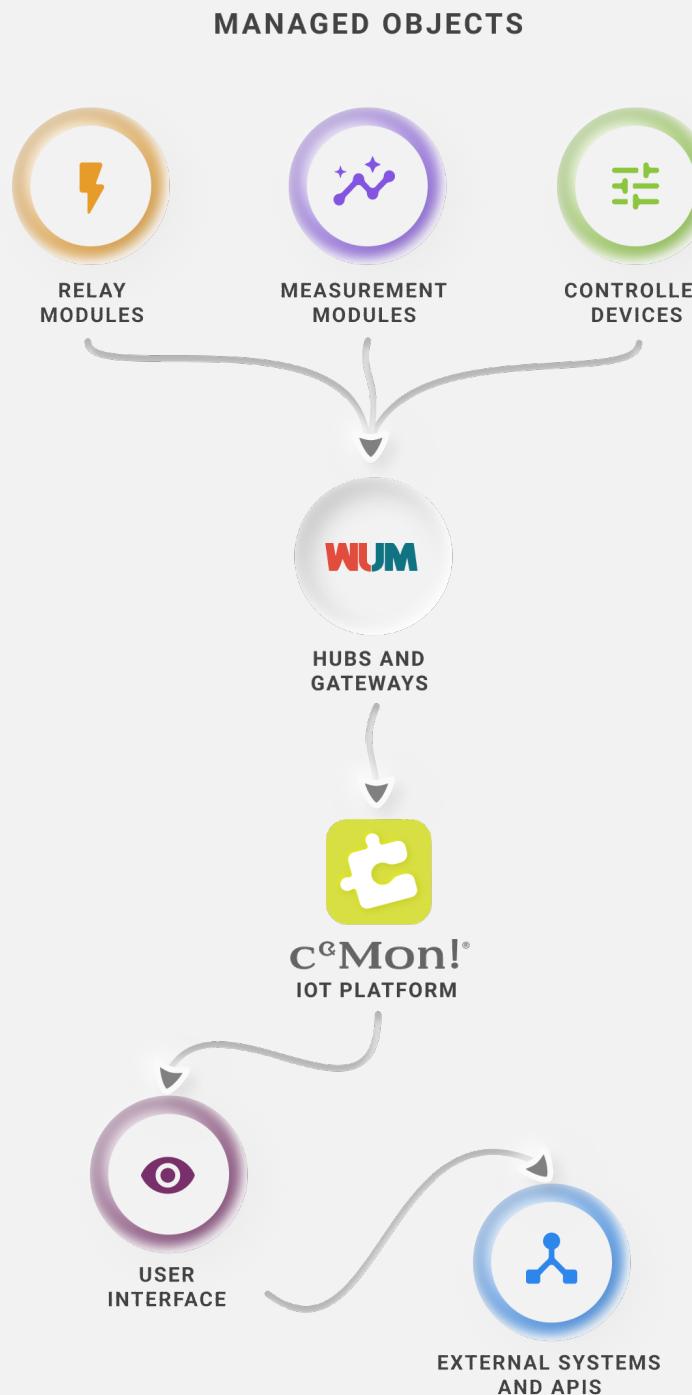
- Lighting and power management;
- Climate control (HVAC);
- Automation of blinds, gates, doors, and other systems.
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4. Flexibility and Open Interfaces

- Support for Modbus, Buspro, DALI, MQTT, DMX, IEC, DLMS/COSEM, and other protocols;
- API for integration with external BMS, SCADA, and ERP systems.

System Architecture

The system architecture provides scalability from local sites to geographically distributed networks, integration with various types of equipment and metering devices, as well as centralized control through a single interface.



Key Advantages

The C&Mon! System is a highly reliable solution for intelligent automation and management of building engineering infrastructure.

Integrated energy efficiency mechanisms help reduce operational expenditures, while the Multi-Mesh topology and support for redundant industrial protocols ensure stable communication and high system fault tolerance.

ADVANTAGES	APPLICATIONS
✓ Scalability	✓ Commercial Real Estate
✓ Energy Efficiency	✓ Residential Real Estate
✓ Integration Flexibility	✓ Industrial Facilities
✓ Centralized Control	✓ Social Infrastructure
✓ Reliable Communication	✓ Energy Sector

System Applications

The C&Mon! System is used across diverse facility types: from shopping malls, office buildings, and hotels in commercial real estate to residential complexes, apartment buildings, and large private houses. It is also implemented at industrial sites such as factories, warehouses, and logistics centers, where the system automates processes and monitors resource usage.

In the public sector, including schools, hospitals, and government institutions, it improves operational reliability and efficiency.

In the energy sector, the C&Mon! System is applied for monitoring, metering, and automation of distribution nodes, ensuring stable operation of distributed networks.

DETAILED FUNCTIONAL DESCRIPTION OF THE C&MON! SYSTEM

1. Centralized Infrastructure Management

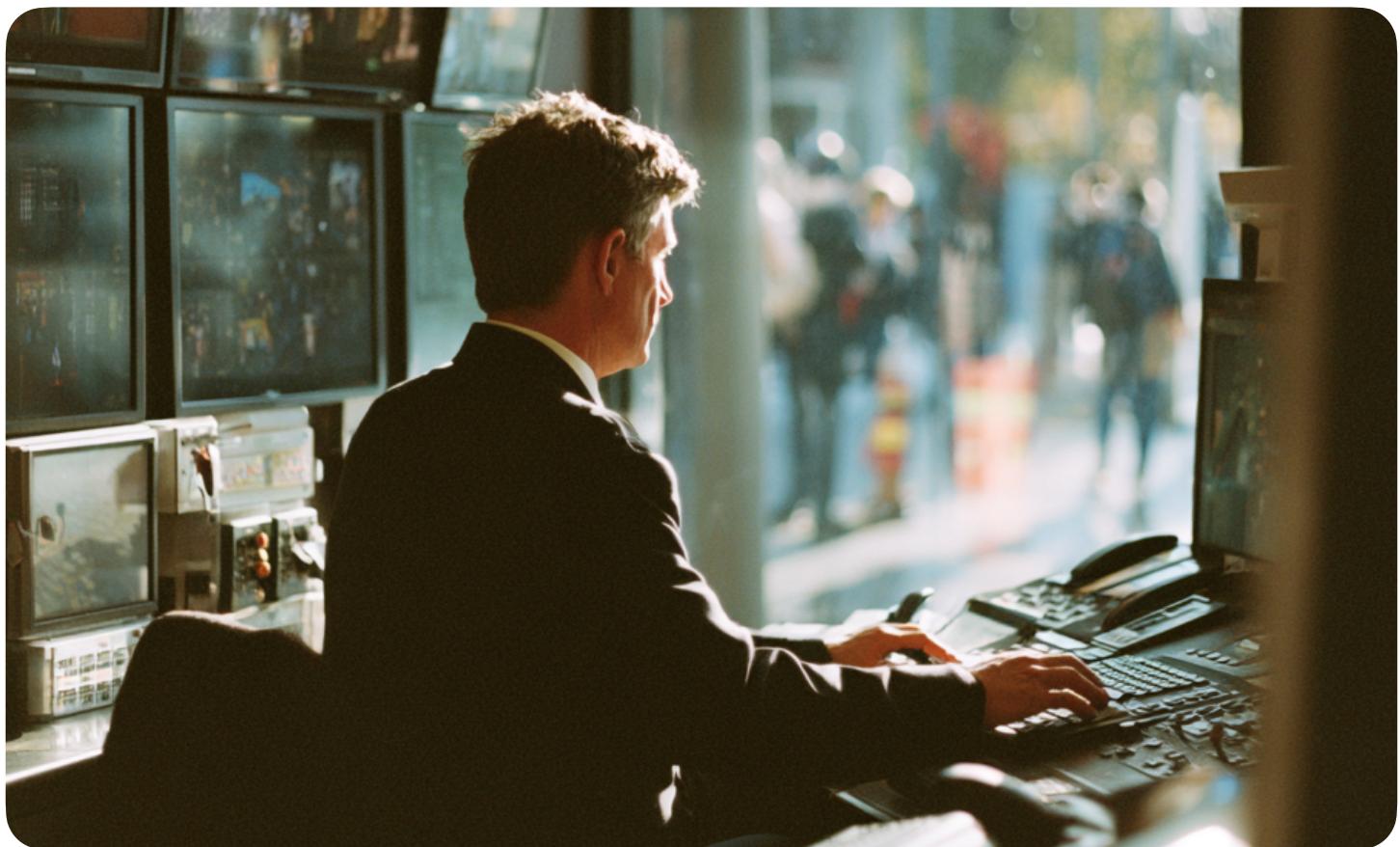
✓ Unified IoT platform for managing all facilities and devices

C&Mon! Center platform integrates all engineering system management and monitoring modules, regardless of the scale or geographic location of the sites. All data is aggregated into a single control center, accessible both from the cloud and locally.

✓ Real-time dispatching with remote monitoring and control capabilities

The dispatcher has a complete overview of the status of all systems and can promptly manage them remotely:

- Switch lighting, HVAC, and automation on or off;
- Set and adjust schedules;
- Respond to emergency events;
- Control access to facilities.



2. Lighting and Power Management

✓ Flexible lighting zone control

- Control groups of luminaires or each fixture individually;
- Dimming by command and/or pre-set scenarios;
- Integration with presence and light sensors;
- Automated switching on/off based on schedules or external conditions.

✓ Power load management

- Control power supply for socket and high-power lines;
- Monitor the status of equipment and power supply lines.

3. Climate Systems (HVAC) Management

✓ Integration with ventilation, air-conditioning, and heating

- Set temperature and humidity levels by zones;
- Automatically maintain a comfortable microclimate;
- Flexible control depending on time of day and room occupancy.

✓ Working with external and internal climate data

- Retrieve real-time weather data;
- Configure system responses to weather changes.



4. Engineering Automation and Access Control

✓ Automation of devices and mechanisms

- Control of locks, gates, blinds, roller shutters, and other mechanisms;
- Automatic triggering scenarios based on specific events.

✓ Access and event control

- Manage access for employees and tenants;
- Maintain detailed access event logs.

5. Data collection and processing from utility meters

✓ Support for electricity, water, gas, and heat meters

- Real-time data collection;
- Comparison of consumption across different zones and facilities;
- Generation of reports for internal control and submission to utility providers.

✓ Integration with billing systems

- Preparation of data for tenant or owner billing.

6. Safety and Facility Status Control

✓ Integration with security alarm systems

- Receive alerts about unauthorized access, fire, flooding, and other threats;
- Forward events to a security desk or emergency services.

✓ Equipment and system status monitoring

- Diagnose the operability of relay and control modules
- Monitor the integrity and proper functioning of communication devices.



7. Multi-level Notification and Reporting System

✓ Personalized notifications

- Event alerts via email, SMS, push notifications, and messages in messengers such as Telegram and WhatsApp.

✓ Report generation

- Automatic creation of reports on energy consumption, events, malfunctions, and user activity.

8. Flexible Scenario and Logic Configuration

✓ Custom scenarios

- Set up “smart” scenarios, for example turning off lighting and HVAC during non-working hours or when no one is present.

✓ Schedules and automated actions

- Configure system operation times based on calendars and schedules.

9. Integration with External Systems and APIs

✓ Standardized interfaces

- Support for protocols such as Modbus, Buspro, DALI, MQTT, DMX, IEC, DLMS/COSEM, LoRaWAN, Zigbee, and others.

✓ API for external applications

- Integration capability with ERP, SCADA, CRM, billing, and service platforms.

10. Redundancy and Fault Tolerance

✓ Wireless Multi-Mesh network

- Reliable device-to-device communication across large or complex sites;
- Automatic rerouting if individual nodes fail.

✓ Local and cloud architecture

- Full functionality available both in cloud mode and on a local server.

BENEFITS OF IMPLEMENTING iDOMUS C&MON! SYSTEM

Increased Energy Efficiency and Lower Operating Costs

Real-time energy consumption breakdown

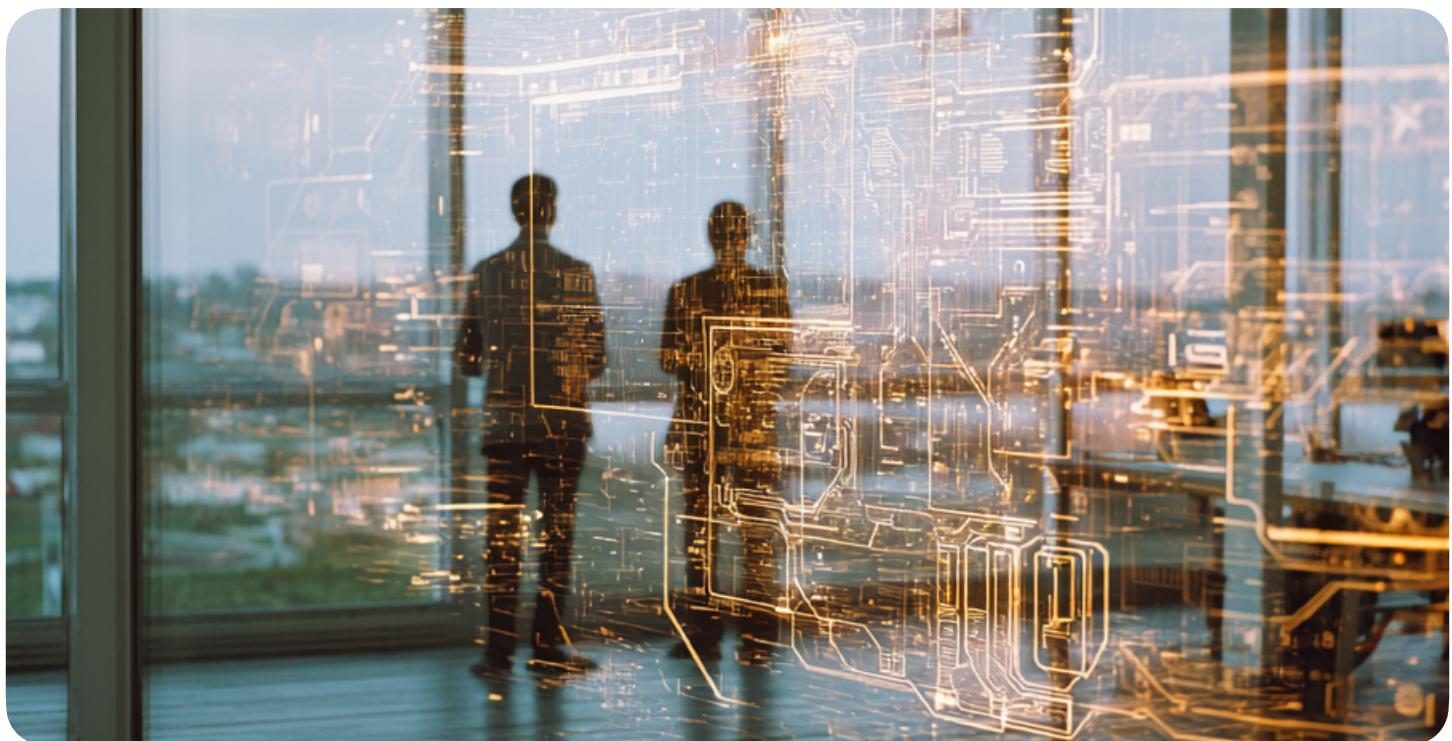
The system provides complete data on the consumption of electricity, water, gas, and heat for each facility, room, or piece of equipment. This helps identify areas of excessive resource use and take measures to optimize them.

Automation of engineering system operations

Devices operate according to predefined scenarios (for example, switching off lighting and climate-control equipment during non-working hours or adjusting temperature according to the time of day), minimizing unnecessary expenses.

Reduction of peak electrical loads

Load management helps prevent the simultaneous activation of high-energy systems and reduces peak consumption, which is especially important when electricity tariffs vary by time of use.



Centralized Control and Monitoring

Management of dozens or hundreds of sites from a single platform

Whether you manage just one site or hundreds across the country, you get a centralized interface to monitor and control all systems at every location.

Access via web and mobile interfaces

Data and controls are accessible from any device, such as a computer, tablet or smartphone, which makes operations flexible and available to staff at all levels.



System Scalability and Flexibility

The C&Mon! System is designed to be effective for facilities of any scale and purpose, from residential complexes to industrial plants, shopping malls, office and administrative buildings. It adapts to the specific characteristics of each site while maintaining stable and reliable operation regardless of the number of control points.



Thanks to support for widely used engineering protocols, the system easily integrates with existing equipment without the need for complete replacement. A multi-level architecture using WUM gateways and data concentrators ensures straightforward scalability: new buildings and areas can be connected without major reconstruction of the entire infrastructure. This makes the system flexible, convenient, and ready for growth.

Enhanced Security and Manageability

Security systems monitoring

Integration with security and fire alarm systems provides real-time notifications of any incidents.

Remote access and automation control

Managing locks, gates, doors, blinds, and other elements makes facilities more controllable and secure.



Industrial-Grade Reliability and Connectivity

Reliable Wireless Multi-Mesh Network

The proprietary WUM wireless communication technology ensures high fault tolerance and stable performance across large areas and complex facilities.

Support for redundancy and fault-tolerant topologies

Intelligent traffic routing prevents loss of connectivity even if individual nodes fail.

Open Interfaces and Integration with External Systems

The system integrates with ERP, SCADA, CRM, and other enterprise platforms through open protocols and APIs. This connects the BMS with key business processes and simplifies management.

It also supports secure data transfer to external contractors and utility providers without losing control over the engineering infrastructure.

Environmental and Social Responsibility

Reducing the carbon footprint of facilities

Optimizing energy consumption helps decrease greenhouse gas emissions and meets ESG and “Green Building” requirements.

Improving the living environment

Managing climate, lighting, and automation increases comfort and productivity for people inside the building.

Ready for Future Development

Support for smart cities and distributed energy systems

The iDomus C&Mon! Center platform is already prepared to become part of larger initiatives such as Smart City, Smart Grid, and other digital transformation programs.

We are ready to help you implement an intelligent BMS solution that will make your facilities more manageable, sustainable, and efficient.

05 USE CASES AND RESULTS

APPLICATION AREA	RESULT
Lighting & Climate Control in Offices	Reduced costs & improved tenant comfort
Consumption Monitoring in Residential Complexes	Transparent utility billing & prevented overconsumption
Access Control & Security in Industrial Zones	Enhanced control & reduced risks
Shopping Center Infrastructure Management	Peak load reduction & automated maintenance
Integration of Distributed Objects into a Unified Monitoring System	Improved network manageability & reduced maintenance costs



06 CONCLUSION

The intelligent system



By iDomus

represents a next-generation approach to managing building engineering infrastructure at any scale.

By combining advanced IoT technologies with a proprietary ecosystem of devices, it ensures centralized control, measurable resource savings, enhanced comfort, and improved security.

We are ready to support you in implementing a high-performance, energy-efficient BMS solution tailored to your facilities.



idomus.pro