Hungarian Smart City Solutions

Smart Energy - Smart Mobility

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HEPA GREECE

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Smart Energy - Smart Mobility

EVOPRO

Smart energy and microgrid solutions

EVOPRO group is an international engineering company that provides comprehensive engineering services and develops innovative products in various industries worldwide, with a focus on transportation technologies, energy, and industrial automation.

Evopro's solutions

EV CHARGING SYSTEMS

Fast AC/DC charging system for electric vehicles during short and mid-term parking. Characteristics: Charging to 80% even in less than 30 minutes, integrated AC/DC converter, simultaneous AC & DC charging, different Charging connection types and floor-standing installation.

Product Presentation

EVOPRO microgrid solutions

Product presentation

The microgrid monitoring and control solution developed by Evopro Innovation integrates controllable and uncontrollable energy units seamlessly together and forms them into an intelligent local distribution system. The GREENERNET microgrid is able to provide flexibility services to the utility distribution system by participating in demand response programs and implementing a dedicated communication channel towards the utility's ICT systems.

Grapes Solutions

Smart E-Mobility app

Grape Solutions is a dynamic Hungarian ICT software development company offering custom applications related to E-Mobility, Smart City, IoT, Robotics Automation and Financial Reporting. Grape Solutions has a wide network of international customers such as Bayer, Citibank, Sanofi, Wizz air, General Electric, MOL Group, EIT, Generalli Group etc. It has won the Invitech Innomax Awards (2017, 2015 & 2012) three times with RPA applications related to Healthcare, data management and authentication and verification systems.

Company Presentation

E-CHARGERS MOBILITY APP

Grape Solutions has created a unique mobile application for charging stations that offer location on the GPS map, online payment and digital receipt document. The application facilitates both drivers and charger companies as they have an automated payment system that issues receipts and creates customer database. This application is used by the No. 1 Hungarian company for electric vehicle chargers with 4.8 million customers.

Product Presentation

Smart Buildings

Grapes Solutions

IoT Solutions for
Smart Constructions – Smart Buildings – Smart Energy

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Company Presentation

IoT Platform for Smart Construction

Grape IoT platform provides flexible levels of IoT monitoring with rule automations, diagnoses, alert management and setting maintenance appointments. Enhanced analytics dashboard ensures to receive all statistics and reports on time. The solution enables manufacturers, operators and administrators to make effective decisions based on live IoT device-group data. Grape IoT platform supports classic communication protocols like MQTT, REST and industrial like Modbus which makes the software easy to integrate with wide variety of devices. Built on microservices architectures the system provides high scalability both horizontally and vertically, forming a private cloud as well as providing on-premises operation.

IoT Platform for Smart Buildings

Intelligent buildings offer facilities that leverage connected technology, IoT devices, automation, and advanced analytics to mitigate various energy waste. IoT ecosystem in buildings provides greater convenience for facility managers, safety for building occupants with higher energy and operating return on investments. By leveraging data from connected devices, they reduce operating costs minimizing the impact on the environment.

IoT Platform for Renewable Energy

Grape IoT platform ensures the software framework for energy communities that allows real-time communication and data collection with intelligent devices (e.g. smart meters, solar farms, sensors, etc.) integrated into the system while suggesting consumption patterns to the energy community members, thus achieving optimized operation and use.

IoT Platform for Smart Cities

Grape IoT Platform ensures a wide variety of out-of-the-box IoT management features for smart parking, smart water management, connected waste containers, smart traffic lights for automated traffic balancing, smart streetlights, and smart buildings.

IoT Platform for Smart Homes

Grape IoT connects intelligent sensors, such as wired security detectors, cameras, thermostats, smart plugs, lights, entertainment systems, locks, and other smart home appliances. Besides the platform, an application is also available for end-users to manage their connected devices from mobile phones, tablets, and computers.

IoT platforms presentation

MOHAnet

IoT Devices & Software for Smart City - Smart Factories and Smart Logistics

MOHAnet is a Hungarian company that provides customizable IoT solutions. They have a proactive approach to IoT technology and the integration of various applications. They offer specialised and configurable IoT devices, which transmit signals for systems such as fire alarm signaling, temperature control, machine and elevator monitoring, elderly and patrol supervision, and vending machines.

Company Presentation

IoT devices for multi-level Metering

Moniphone is a remotely monitorable application-specific mobile phone, which provides transparency and remote monitoring of the daily activity of users. The device was developed for those whose work or lifestyle has a regular routine, which needs administration or supervision. Moniphone is popular to residential and business customers e.g. an emergency phone for elderly people, or an everyday communication tool for physical workers.

I-**MACHINE** are modular building blocks for every need. The basic device can relate to various technologies, thus making it adaptable for individual solutions. The basic device can be used as burglar & fire alarm monitoring, monitor access control system, vending machine monitoring, water pump monitoring, meter reading, load balance monitoring, refrigerator, and liquid tank monitoring.

IoT software

MONITORBOOK Monitoring Platform that provides continuous insight and real-time monitoring for those who would like to track and monitor different machines, vehicles and people. With two different versions (Home & Pro) it gives you the possibility to make unique queries and statements, generate and edit worksheets, and handle dispatches and interventions.
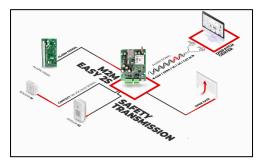
WM SYSTEMS

IoT solutions for Safety, Metering, Industrial Automation and Smart Grid

WM SYSTEMS is a significant IoT/M2M developer, manufacturer, international trading company. Recognized partner of international mobile operators, utility companies, providers. Their activities are based on the IOT/M2M industry, serving their partners with complete data transmission solutions built for the network of the mobile and internet operators.
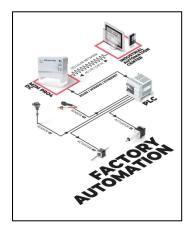
Company Presentation

IoT Safety Solutions

WM Systems offers alarm signal transmitters with the latest future-proof cellular technologies for multiple security applications. Cellular technologies make security systems better by improving the speed and stability of communications between alarm panels and monitoring centers. Their cellular alarm panels can easily replace legacy land-line based transmitters. These devices can be integrated into almost any security system to provide high-level security and improved reliability.
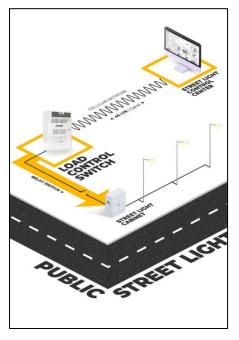
Smart Metering solutions

They offer cellular IoT communication devices for smart metering solutions. Modems and routers allow for Automated Meter Reading (AMR) of electricity and water meters. Customers can also build infrastructure – by combining with their data concentrators, routers – to collect and send data to the central head-end-system (HES) or a database. WM modems are specifically designed for the electricity meters of large manufacturers and are at the heart of AMI (Advanced Metering Infrastructure) of public utility companies.

Industrial Automation

WM offers smart communication devices such as gateways, industrial routers and data concentrators with multiple interfaces (RS232/RS485, Ethernet ports, micro-USB, etc.), in order to connect all types of industrial equipment. Their devices are able to communicate via common application layer IoT protocols, for example MQTT, previously known as the "SCADA protocol." The Device Manager® helps managing all communication devices. It checks device availability, quality of connections, local and mobile network health, transmission of data through the mobile networks, and more.

Smart Grid

WM offers IoT communication devices for smart grid solutions: public street lighting control, load management, monitoring and control of solar plants. WM devices are at the heart of flexible public lighting services, providing an internet-based bi-directional communication based on the Open Smart Grid Platform. They allow the automation of basic lighting controls such as switching on/off based on a programmable schedule, dimming, failure detection, and monitoring lamps status and consumption (e.g.: voltage, current and power factor). In the case of solar plant deployments, cellular connectivity is the only truly reliable connectivity, offering unparalleled uptime and geographic coverage that other wireless connections can't match. Two-way connections allow more sophisticated billing models and dynamic pricing.

Smart Benches - Smart Furniture

Kuube

Premium quality Phone charging and free Wi-Fi on solar powered smart benches

Kuube is a Hungarian startup. They produce smart furniture that combines innovative technology and sustainability using the solar energy. Unlike other manufacturers, they have not solved the surface over the solar panels with easily scratched and fragile plexiglass, but they use an extremely resistant, 12 mm thick tempered, glued glass. The design is printed between the two layers, so it can be customized if required. Kuube street furniture can be suitable for serving the needs of smart bench users for decades.

Company Presentation

Kuube's Solutions

KUUBE plus Smart Bench

The completely unique shape and roof give you the opportunity to spend time and charge up your smart device in a sheltered place in the summer, even in the midday sun. Thanks to the 480-watt solar panel, services provided by the smart bench even in winter.

High quality smart street furniture made of aluminum, glued tempered glass and Hungarian ash wooden seat. The bench includes sensors that measure outside and inside temperature, humidity, uv index, air pollution, air pressure. It provides GPS and motion sensor, battery and solar panel voltage, solar panel charging current, total consumption, voltage and current measurement of peripherals, number of USB and QI charging, number of users connected to Wi-Fi, data uploaded and downloaded.

KUUBE NANO Smart Bench

With its futuristic shape, it stands out from the average street furniture of public spaces, and it already dresses the space on its own. Although the dark-colored solar panels could become hot under the tempered-glued glass surface on the hottest summer days, the built-in fans automatically cool the smart bench above an internal temperature of 35 °C. The strong sunshine provides plenty of energy for the cooling system. Thus, the surface of our benches is a pleasant feeling even in summer.

Kuube ECO Smart Bench

Clean design, small size, countless features. The three-seater KuubeECO is our smallest smart bench. It is equipped with two USB and one wireless chargers. Just like the big brothers, Kuube NANO & Kuube PLUS, it has unlimited internet access via Wi-Fi.

Kuube BOOK

Public book exchange for local readers with renewable energy. The structure of the cabinet is powder-coated aluminum, the doors and the solar panel are covered with safety glass. The doors are closed by gas springs. The lighting of the larger cabinet is provided by solar panels and LED light, and its operation is ensured by twilight and time switches. Installation of a Wi-Fi hotspot for the adult version is optional.
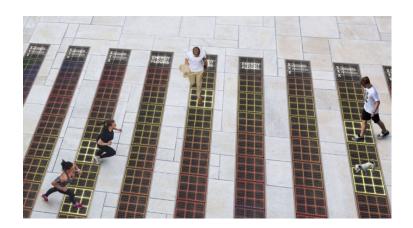
[Technical Details](#)

OK Power

Solar mobile charging stations and smart benches

[Ok.Power](#) is a Hungarian Smart City company that develop smart devices for public spaces and municipalities. Their product portfolio consists of telephone charging cabinets, mobile charging stations, telephone storage and charging cabinets, hard disk cabinets, storage, manufacture and distribution of smart benches.

Ok. Power solutions

Solar mobile charging stations

A recently developed network-independent renewable energy product is the desktop charging station. Recommended for restaurants, guesthouses, offices, workplaces, gyms, etc. For free mobile charging that increase the convenience and variety of services offered. Recommended for charging all types of mobile devices.

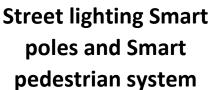[Product Presentation](#)

Smart Benches

Silver smart bench is an urban product based on solar energy. It offers users the ability to charge electronic devices via 2 USB and 2 wireless chargers and the ability to access the Internet (depending on the contracted service). The construction of the bench is made of galvanized, and powder coated steel and tempered glass, which ensures its durability and quality. Inside the bench are batteries that store excess energy for days when there is a lack of sunlight. Therefore, the use of functions is possible even on gloomy days.

[Product Presentation](#)

Hofeka

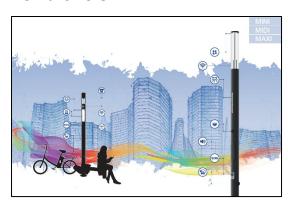**Street lighting Smart poles and Smart pedestrian system**

[HOFEKA](#) company is a Hungarian manufacturer of street lighting poles, brackets, and anchoring plates. Established in 1888, they have gained widespread recognition and popularity in Hungary, Europe as well as the Middle East. The company has three facilities: R&D and logistics departments are in Nagytarcsa, next to Budapest, and two manufacturing plants are in Dióskál, close to Austria. Their Smart City solutions greatly contribute to the modern and cost-efficient operation of municipalities. These solutions include programmable light fixtures, parking assistance systems, waste management, charging electric cars, e-bikes, and other devices, environmental sensors, wireless internet, and integrated surveillance systems.

[Company Presentation](#)

Hofeka Solution

Smart Pole

Smart pole saves great amount of energy while also serves as a charging station for electric cars. The built-in Wi-Fi router provides constant communication opportunities and continuous flow of information enabling internet usage for several hundred users within a 200-metre radius. In addition, it significantly improves the security of the streets, as it is equipped with an emergency call button and a surveillance camera. Thanks to its modular build-up, the smart pole can be customized, and the scope of its functions can be further extended.

[Product presentation](#)

Smart Pedestrian crossing System

Hofeka

[HOFEKA](#) company is a Hungarian manufacturer of street lighting poles, brackets, and anchoring plates. Established in 1888, they have gained widespread recognition and popularity in Hungary, Europe as well as the Middle East. The company has three facilities: R&D and logistics departments are in Nagytarcsa, next to Budapest, and two manufacturing plants are in Dióskál, close to Austria. Their Smart City solutions greatly contribute to the modern and cost-efficient operation of municipalities. These solutions include programmable light fixtures, parking assistance systems, waste management, charging electric cars, e-bikes, and other devices; environmental sensors, wireless internet, and integrated surveillance systems.

[Company Presentation](#)

Hofeka Solution

Smart Zebra- Smart City pedestrian crossing system

Zebra Smart City pedestrian crossing system consist of luminaires and optics for pedestrian crossings. The Smart Zebra BOARD retrofits to the existing pole and or as a bracket. It has unique design and is an easy to fix solution. The Smart Zebra BOX includes Illuminated LED stripes that flashing at the touch of the button. They have wireless communication and offer real-time data.

[Product presentation](#)

Smart parking system

Smart Lynx

Smart Parking and Sensor Traffic Counter solutions

Smart Lynx is a Hungarian innovative Smart City company that develops mobility applications related to Smart Parking and Sensor Traffic Counter solutions, making cities more livable. They offer Smart Parking and Traffic monitor solutions for municipalities, parking operators, shopping malls, airport and petrol stations.

Smart Lynx solutions

Smart Parking Sensors

They deploy small-sized, flush-mount Smart Parking Sensors in each on-street parking space that can detect the occupancy of a particular space. The radar-based detection mechanism enables the sensor to detect a parking event with an outstanding reliability of over 99% and an average lifetime of 5 years regardless of weather, traffic, and surface conditions. NB-IoT communication allows the sensors to be fully functioning without any additional network equipment while also supports battery efficiency.

Smart Parking Cloud Platform

Smart Parking Cloud Platform is an innovative system that supports the operation and monitoring the parking sensors and parking spaces. The system collects real-time data and translates them into actionable insights. The platform is developed to support multi-level user modes. It has a map-based interface, real-time and historical occupancy data along with several interactive predefined statistical figures provide information.
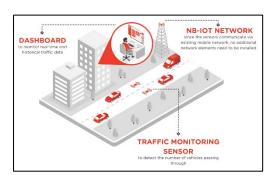
Smart Parking Mobile Application

The sensor data can be visualized in their Smart Parking Mobile Application, or any app that could be developed. By making real-time occupancy data available to motorists, the app helps them find available parking spaces or remotely check occupancy - whether it's disabled parking, loading bays or spaces with electric chargers.
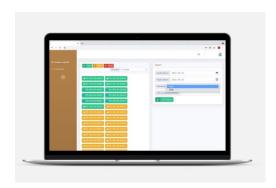
Products presentation

Traffic Monitoring Solution

Their flush-mounted, lane-by-lane Traffic Monitoring Sensors use magnetic field detection to determine how many vehicles have passed a given point, making urban traffic data easily available in real time through the Traffic Monitoring Dashboard. The precise operating mechanism can be calibrated to customer needs, allowing traffic data to be summarized and made available every 1 minute. The sensors can not only determine the traffic volume but also the average speed of the vehicles passing over them.
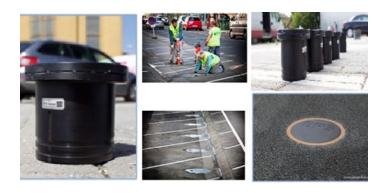
Traffic Monitoring Dashboard

With the Traffic Monitoring Dashboard, near real-time and historical vehicle traffic data is just a click away, providing valuable information for cities, roads and even commercial operations. The data can be exported for easy creation of any custom analysis, decision support material, presentation or report, or even integrated into third-party systems. Customized statistical reports can also be created and displayed on the home screen of the Traffic Counter Dashboard, allowing you to identify anomalies, traffic disruptions or trends at a glance.

Makesense

Smart Parking Geometric parking sensors

MAKESENSE is a Hungarian company that develops and manufactures smart integrated solutions such as Multi Sensor Solution Provider for Smart Parking and Smart City applications. Smart solutions for finding Parking, environmentally friendly, Geometric parking sensor Solution offers the solution for the immediate availability of Parking in the city.

Company presentation

Makesense Smart Parking Geometric parking sensors

MAKE(S)ENSE Parking Sensor Technology Parking space occupancy sensors are based on sensing and measuring the earth magnetic field of individual parking spaces. They are buried underground just below surface level, with no protruding parts. They can be installed in a flexible manner as no connection is required to the public networks neither for power input nor for communication purposes. Sensors operate on batteries with very low power requirements, having a life span of up to a decade (with battery extension pack). They transmit occupancy data to parking meters or to gateways via RF technology.

Product Presentation

Smart access control system

Accessium

**Cloud based IoT
access control
with M2M**

Accessium is a Hungarian ICT developer company with focus in access control and time & attendance systems. They have developed an award-winning access system with various modules: time and attendance, visitor management, emergency evacuation, mobile card and barcode scanner, credit management, etc. They offer highly flexible solutions: Individual or Mix and Match system structure and tailor-made solutions.

Company presentation link

Accessium Solutions

eAccess: eAccess is a cloud-based access control that includes an eAccess control panel and provides ACaaS (Access Control as a Service) based service. The service is using the secure and reliable GPRS data communication between each eAccess control panel and the server. Using REST API, the system can be integrated with other applications such as building management, time and attendance, payroll, asset management, and key management systems.

eReader – Mobile card and bar code reader: The developed barcode reader not only works as a card reader, but also reads the most commonly used 1D barcode and the 2D codes such as. the QR code In case of REST API integration with third party the read information can be used at once in the customer's system. This reader is suitable for internal or external applications.

eMonitor – Data collection/monitoring/processing: The collected data not only used in real time throughout a predefined process but also useful in longer-term and data might be used retrospectively. eMonitor can be a great tool for facilities to be more effective, successful and profitable.

eHorn – Work Shift signal: This system is designed for those facilities which deal with large areas or noisy work environments. This new innovation not only capable of sounding sirens on a pre-programmed schedule, but it is also possible to upload multiple audio files that trigger different inputs according to dynamically changing programs/work schedules, e.g., heat alert work schedule.

eTimesheet – Time & Attendance system: The eTimesheet system is also integrated into the eAccess interface, where a specially developed, movable or fixed 5 or 12 push-button readers send data, but in Accessium, normal readers can also have working hours authority.

Escape - Emergency evacuation management system: This is a new and outstanding security solution that works with eAccess. The solution supports the ambulance, firefighters or police job with the last known location of the users. As the system independent of local infrastructure, it works perfectly in case of fire and even in the damage of the local network. As it gives no spatial constraints, the information can be checked in real-time from anywhere, thus supporting the firefighter's jobs and save lives.

eVisitor – Visitor access: Visitor management is integrated into eAccess in such a way that everyone is able to learn how to manage the cards easily in everyday use. The most important aspect was the user-friendly surface.

eTicket - Credit/Ticket Management: Would you use the card for payment in the facility area as well? It can be used with or without third-party integration. The software is prepared and can be customized to the customer's requirements.

Products catalogue

References