COMARCH IOT PLATFORM

IN THE PURSUIT OF BEACOMING SMART

WHITE PAPER

COMARCH
Technologies

CHALLENGE

Businesses around the world are seeking the direction for the future, trying to find the right solution to boost up their efficiency and productivity. These businesses will use the power of connected devices managed by a computing platform to identify problems and fix them quickly.

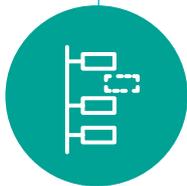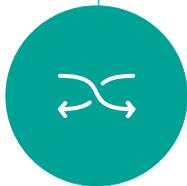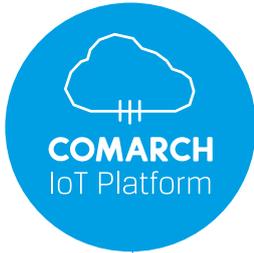At Comarch Technologies we have a vision of business equipped with the best available technology, from business management platform to connected devices. To fulfill this vision, we created Comarch IoT Solution, which consists of the IoT Platform cooperating with Comarch connected devices (e.g. beacons, gateways or intelligent chips) as well as third party ones. This paper was created to give you an insight of this technology solution which can create a better future for your business.

WHAT IS COMARCH IOT SOLUTION?

Comarch IoT Solution takes advantage of the Internet of Things (IoT) concept that connects people, devices, platforms, processes and data used to enhance business performance.

It helps monitoring business processes, as well as accurately detect and fix problems through various analytics provided in the system.

- SMART VEHICLE
- SMART HOME
- INTELLIGENT LOCK
- SMART WORKPLACE
- SMART APPLIANCES
- SMART MANUFACTURING
- SMART HEALTHCARE
- SMART LIVING

COMARCH IOT PLATFORM

COMARCH IoT Platform

that links the physical world of connected devices with the digital business infrastructure – business applications as well as core enterprise systems. This layer consists of four components.

CONNECTIVITY

enables the communication between connected devices and Comarch IoT Platform thanks to embedded communication libraries. It supports a number of protocols such as Wi-Fi, Bluetooth, Bluethooth Smart, ZigBee, Z-Wave.

BIG DATA MANAGEMENT

vast amount of data acquired from connected devices and digital business infrastructure is converted and normalized into readable business information through the Big Data Management component. As a result, business has a chance to improve the accuracy and efficiency of business processes as well as their execution.

APPLICATION FRAMEWORK

contains all necessary libraries for the rapid application development. The libraries contain open application programming interfaces (APIs), which support both iOS and Android devices. As a result, connected devices are monitored in a secure manner.

DEVICE & BUSINESS SYSTEM MANAGEMENT

responsible for configuration of devices and enterprise systems on IoT Platform. In terms of devices, IoT platform administrator provisions all the assets needed including content and alert notifications.
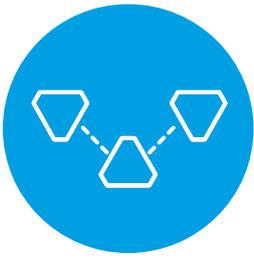
CONNECTED DEVICES

are electronic devices linked to the network through various wireless protocols such as Bluetooth Smart, Wi-Fi, ZigBee, Z-Wave, and other. Every connected device carries a digital identity used for its identification in the network. It can operate interactively and autonomously acting as a sensor or actuator. Its aim is to collect and then send real-time data to its cloud management system. Therefore, the system knows what is taking place around a connected device at any location and point in time. There is a set of Comarch devises that integrate with IoT Platform (e.g. beacons, gateways or intelligent chips) and constitute a comprehensive solution for any Smart business. However, any third-party devices can be easily integrated with the platform as well.

APPLICATIONS LAYER

which is responsible for the provision of information via a mobile application. It brings together a wide portfolio of Comarch applications as well as the ones built on a client's request.

There are a few out-of-the-box applications based on Comarch Beacon® technology that cooperate with IoT Platform:
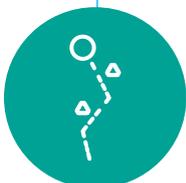
COMARCH DETECTOR

Created to report incidents, for example a fire accident or a burglary.

COMARCH GUIDANCE

Provides indoor navigation that can be combined with the text, voice search function or real-time data received from Comarch IoT Platform.

COMARCH ROUTE PLANNER

innovative public transport journey planner accessible on the user's smartphone screen. A dedicated application shows the current localization and suggests the best public transport option to reach the destination in the most efficient way, providing instructions on how to get to the nearest public transport stop.

COMARCH
beacon

IOT ENVIRONMENT

Comarch Beacon® is a small sensor transmitting a continuous signal through Bluetooth 4.0 (Bluetooth Low Energy) which is readable to a specially designed mobile application working on iOS or Android operating system. When the application detects a signal, it triggers a set of predefined actions such as indoor navigation or contextual messaging, which were built in the app or downloaded from a cloud server. From the business point of view, beacon technology allows for data collection and analysis.

From the clients' perspective, beacon solution is about receiving hyper-targeted messages directly on their smartphones – e.g. the information about traffic congestion, warnings, shopping preferences, also giving a chance to plan the route through the city. This is what makes life smart and provides a solution that is beneficial for both points of view.

WHAT ABOUT THE SECURITY OF COMARCH IOT PLATFORM?

Comarch IoT Platform has numerous cutting-edge security solutions that protect its data confidentiality, integrity and availability. Among them the most important are:

- Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS) usage, which provide security communication through a computer network. These protocols were implemented to prevent from tampering, spoofing, eavesdropping and message forgery.

- Device authentication that takes place with the use of session key, which is used to prevent unauthorized access to Comarch IoT Platform.

- User authentication and authorization with the use of password or other solutions. Once a user is logged in, there are many specific security roles which define access to specified data.

- Restricted physical access to Comarch Data Centers located around the world in which the data from connected devices is stored and backup.

HOW CAN BUSINESS PUT COMARCH IOT SOLUTION IN USE?

Comarch Technologies envisions countless opportunities for its IoT Solution. It can perfectly serve business in trade, logistic, manufacturing and other areas. The opportunities offered by IoT Solution are innovative and endless, giving it the competitive advantage among other solutions available on the market.

Comarch IoT Platform could be used as a solution for:

SMART CITY

seen as energy, gas and water management consumption through wired and wireless connected devices. The application and cloud management system linked to the connected devices suggest the best real-time cost-saving options for the building's owner.

SMART HOME

allows you to remotely control light, heating, air conditioning and other processes as well as electric equipment to make your life more comfortable. In a future home, a room can sense people's presence and based on their living habits automatically set the appropriate temperature, light or television channel.

SMART LOCK

opens and closes a car or entrance door when it receives such an instruction from an authorized device. A connected lock is able to grant or deny access remotely via a mobile application. Furthermore it can give the owner of the connected lock a notification or a camera view of the person who is making an access request.

SMART VEHICLE

automates communication with its owner, manufacturer and local dealership in case of maintenance issues. When a problem is detected, a dealer can inform the car owner of the repair cost and available parts, as well as suggest a convenient time of repair based on the owner's schedule. The real-time data collected from car's performance and usage could be used by the manufacturer to improve its customer's experience. Moreover, if the connected vehicle is linked to a mobile application, the car's location and behavior can be tracked and monitored by its owner and insurance carrier. Good driving behavior could be also rewarded by insurance carriers.

SMART TRANSPORTATION

provides notifications, services and information to citizens, e.g. the localization of empty parking spots or information about public transport inside the city.

SMART HUMAN

provides real-time medical condition feedback via connected devices (wearables). In case of a life threat the cloud management system automatically requests medical assistance.

SMART HEALTHCARE

devices collect and share patient's data with healthcare staff. This helps improve patient's care and treatment which is based on the real-time data analysis provided by a mobile application.

SMART WORKPLACE

provides the foundation for the smart office that would make employees' communication and collaboration easier as well as leverage their productivity. It also allows for identity and access control not only of protected areas but also of the infrastructure and sensitive data.

WHY TO CHOOSE COMARCH IOT SOLUTION?

- Open and flexible solution that can be easily integrated with the existing SW & HW infrastructure through open APIs.

- Generic platform for various devices connecting both wired and wireless devices through multiple communication standards and protocols (e.g. Wi-Fi, Bluetooth, Bluetooth Smart, ZigBee, Z-Wave, and other short, as well as long distance connections).

- Provides secure communication with connected devices and their applications. Since all assets are connected in real-time, it ensures that private and protected data is shared between authorized parties only.

- Manages numerous cloud based applications which are linked to connected devices.

- Provides real-time diagnostics of connected devices. Device management solution configures and monitors them as well as notifies about any malfunction.

- Ties together huge raw data volumes from connected devices efficiently by converting and normalizing them into readable business information. This data could be used to help business generate more revenue patterns, lower costs and improve business processes.

- Provides real-time analysis which could trigger alerts or invoke corrective processes before crisis occurs.

- Integrates with core enterprise systems, from customer relationship management (CRM) and enterprise resource planning (ERP) to other vertical applications. This function helps business improve operational efficiency.

- Delivers good balance between efficiency and value from complex event processing capability to remote communication gateways between connected devices and Comarch IoT Platform.

- Offers flexible pricing and licensing models based on the number of connected devices and its users.

- Provides data disaster recovery

- Provides quick response to client's needs thanks to the full control over the entire R&D process in terms of SW & HW

COMARCH
Technologies

ABOUT US

Comarch is a leading Central European IT business solutions provider specializing in forging business relationships that maximize customer profitability while optimizing business and operational processes.

Comarch Technologies draws from a wide expertise Comarch has accumulated during 20 years of its business activity in the field of delivering comprehensive IT solutions. Its main concern is to provide the customers with the most reliable and secure solutions that consist of advanced software along with innovative hardware infrastructure supported by professional services.

CONTACT US

Comarch Technologies

ul prof. M. Życzkowskiego 27
31-864 Krakow, Poland
Phone: +48 12 621 51 99
Fax +48 12 621 51 01
technologies@comarch.com

technologies.comarch.com   beacon.comarch.com   tpro.comarch.com   secureaccess.comarch.com