Akenza Core

Akenza Core is an easy-to-use agnostic enterprise IoT system designed to help companies and cities control, manage and build real-time connected solutions.

Akenza Core Public is provided as a cloud-based subscription service and makes it easy to connect any device. You can start for free at **core.akenza.io**. No need to worry about infrastructure, Akenza Core Public takes care of hosting, networking, security, storage, backup and IT management.

Akenza Core Private is provided as platform as a service that runs on your Kubernetes cluster in your own Cloud such as Microsoft Azure, Google Cloud Platform and Amazon Web-services. This gives you full access to the entire Software stack including direct access to your device data on MongoDB, CosmosDB or DocumentDB for Machine Learning and AI.

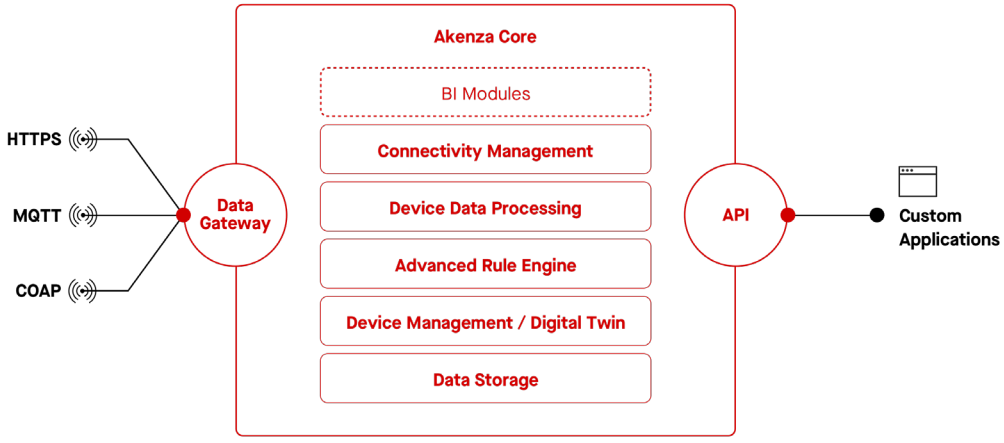
The system works with any network architecture, but specifically design to work for Low Power IoT applications such as NB-IoT, LoRaWAN and Sigfox.

Overview

Akenza Core provides

- **Device management for IoT devices using HTTPS, MQTT, CoAP and LWM2M**
- **Connectivity & Subscription Management for Ericsson DCP, Cisco Jasper, Actility, Loriot, The Things Network, Netemera and Sigfox**
- **Provider Integrations with Swisscom, T-Mobile, KPN, SIMpoint, Heliot, and more**
- **Device Data Processing for real-time event handling and payload encoding library**
- **Rule Engine for event and data drive actions**
- **Open APIs for extending existing functionality or interfacing with Akenza Core with other platform and services such as ERP and CRM systems**
- **Business Intelligence Modules for data visualization and remote control functionality through the web**

Short overview of the different functional areas:



Device management

Akenza Core provides extensive device management for any IoT device. This includes

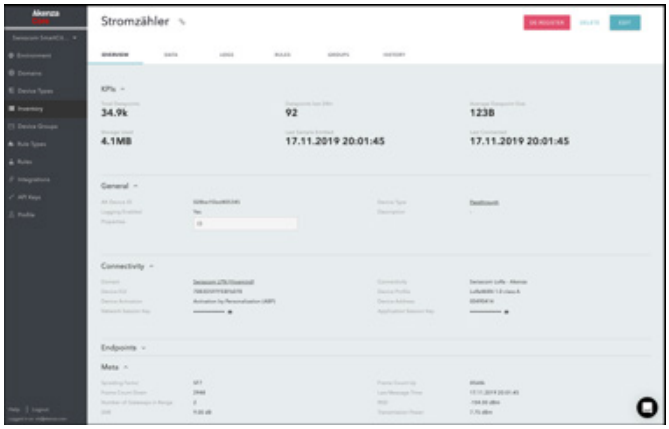
- **Device information**
- **Connection monitoring**
- **Device data viewer and device lifecycle monitoring**
- **Configuration and network management**
- **KPI of device meta-data and statistics**
- **Debugging & troubleshooting features such as event logs and connectivity meta data**

The level of depth in device management depends on device and IoT network, e.g. if a device is running on LoRaWAN you might want to process and encode device data or if you're running your device on cellular IoT and might use the Akenza Core to solely orchestrate your IoT data flow to another endpoint.

Akenza Core offers a unified system for connecting any IoT devices and other IoT-related data source.

We offer a generic JavaScript library to encode and decode your payload from any device. Our Device Type library provides you with preset templates for device data decryption. Even if your device uses a proprietary technology you can always use HTTP, MQTT, CoAP and LWM2M.

Detailed information on device integration using MQTT, CoAP, LWM2M, REST, WebSocket API and JavaScript can be found at **docs.akenza.io**



Network Connectivity support

Akenza Core supports any type of IoT connectivity in a secure manner. The system is specifically design to work well with non-IP based LPWAN IoT technologies such as LoRaWAN, NB-IoT and Sigfox. With our seamless integration with Ericsson DCP and Cisco Jasper you can manage your connectivity plan and status of your SIM card or eUICC subscription all in one place across many different providers and devices. The system provides bi-directional connection to your IoT device, allowing you to process and remote control in real time.

Cellular internet connectivity like 2G, 3G,4G/LTE, 5G are an ideal choice for many M2M applications. It works nearly anywhere in the world without any local network infrastructure integration, especially if your provider allows you free roaming. With Akenza Core you can benefit from a central connectivity management, leverage custom private APN's without having to manage many different connectivity management platforms and complex Provider setups.

Data Processing and Rule Engine

Akenza Core allows developers and power users to run real-time business logic inside the system based on JavaScript language.

Akenza Core Data Processing feature has the following benefits:

- **React instantly to events from devices**
- **Develop highly interactive IoT applications using WebSockets and our REST API**
- **Run IoT use cases on Akenza Core and visualize device data in Business Intelligence Modules**
- **Validate, normalize and derive data according to your own business rules across different IoT technologies and devices**
- **Trigger automated remote control actions based on events**
- **Use powerful JavaScript business logic and timed based rules**
- **Manage cost and device data for long-term storage**

The Rule Engine allows you to define business operations and event driven actions for immediate processing of incoming and outgoing data. These user-defined operations can for example trigger alerts in applications upon incoming data, create new operations based on the received data (such as sending an alarm when a threshold for a sensor is reached) or send downlinks on to a device and trigger operations. Rules can be edited and deployed within the Akenza Core Rule Engine. The operation logic is implemented in JavaScript within system directly.

For more information see *core.akenza.io > Rule Engine*

APIs

Akenza exposes its complete functionality of the Akenza Core through its API. This means that all our functionality is available to you outside of the Akenza Core in your own applications.

In the contrast of many other M2M and IoT platforms, Akenza Core is device, cloud and connectivity agnostic and is designed to run on your cloud and interface with your existing technologies and applications. As a result, you have seamless plug-and-play integrations into a broad range of cloud services adding intelligence to your IoT use case. We provide you with one API to build your complete solution ranging from device data to business intelligence.

Akenza Core uses the most widely used interfacing technologies and works on any connected asset ranging from small embedded devices up to machines while giving you the best possible security.

The Akenza Core Business Intelligence Modules built upon the Akenza Core API enables you to seamlessly extend your IoT use case and visualize data of your devices and sensors.

Visualization and Business Intelligence

Akenza Core Business Intelligence Modules visualize your sensor data centrally and graphically through its web interface. The user interface is fully responsive and designed for mobile-as well as desktop-use.

The Business Intelligence Modules can be configured through the Akenza Core. Users can setup their use cases and devices using simple parametrization to render the stored sensor data.

Akenza Core Business Intelligence Modules ready-made IoT use cases feature:

- **Map view with status and location of all your IoT devices**
- **Energy monitoring for power, water, gas and district heating**
- **Tracking of assets**
- **Climate monitoring**
- **Fill level monitoring**
- **Occupancy monitoring of rooms, desk and parking spots**
- **Washroom usage monitoring**
- **Dynamic cleaning**
- **Service on Demand monitoring**
- **People counting**

Customization

The functionality described above provides you a granular way of customizing and orchestrating your IoT infrastructure end-to-end.

Akenza core has extensive customization options:

- **Create rules and alerts and define your SLA parameters based on thresholds**
- **Use REST API and WebSockets to integrate in your existing business systems and receive emails or SMS notifications based on an event or automated trigger**
- **Set up Business Intelligence Modules for graphic dashboard with KPIs and 2D Floor visualization**
- **Deploy Akenza Core in compliance with enterprise security standards on your cloud**

Furthermore the Akenza Core Private Enterprise Edition can be customized and white labelled.

Summary

Akenza Core by Akenza AG is an independent Device, Connectivity and Data Management system for the Internet of Things (IoT).
It connects, controls and manages IoT devices and connectivity efficiently and reliably.

- **Connect IoT devices anytime, anywhere in no time**
- **Monitor conditions and generate events and alerts**
- **React immediately to conditions or situations**

Lead the future of your business with the Akenza Core IoT System

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Akenza™
IoT made simple

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