

# DATASHEET

## Smart City and Energy

Capabilities and Case Studies



### About PlumTech

PlumTech provides software development services to create solutions for private enterprises and government agencies. PlumTech is an official system integrator of Kaa, a leading enterprise-grade IoT platform. Using Kaa's comprehensive set of IoT features and flexible cloud deployment, we implement end-to-end IoT solutions and smart products for a diverse line of industries.



Flexible, hardware-agnostic  
Kaa IoT Platform



Full-cycle IoT development  
services



Kaa Private IoT Cloud  
for enterprise



Over 100 engineers

# Plumtech for Smart City

The smart city solutions powered by the Kaa IoT Platform place specific emphasis on the efficient environment monitoring, municipal fleet management, smart buildings and smart energy solutions. Integrated with Kaa, smart meters, sensors, and device gateways can be used for real-time monitoring of local and citywide electrical power distribution, consumption of water, gas emissions, traffic load, and other city vitals.

On top of its end-to-end IoT feature set, Kaa offers absolute cloud deployment flexibility and multi-level security. Different connected objects, resources and users can be entitled their specific access rights, data encryption mechanisms, and behavior policies. This resource management flexibility, combined with Kaa's transparency as an open-source platform, allows smart city integrators and device manufacturers to build their smart products much faster and with full freedom to customize them or integrate with anything else.

## What you can do with Kaa



Smart meter networks and grid automation



Smart traffic lights and smart parking



Smart road infrastructure



Ecology monitoring systems



Smart buildings



Live city cameras



IoT-powered waste management



Smart lighting



Municipal fleet management



Security monitoring and incident management

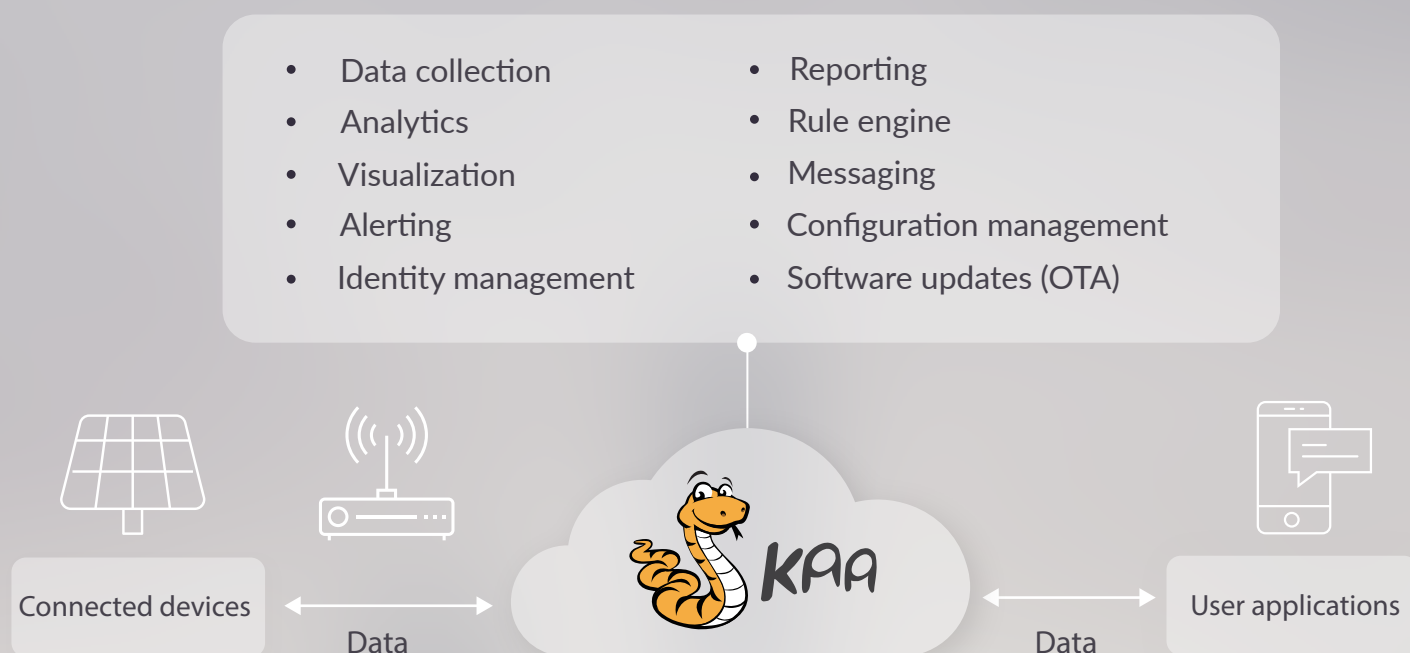


Real-time traffic and crowd maps



Smart advertisement boards

# Smart Energy cloud applications with Kaa



The open-source-based Kaa IoT Platform provides essential IoT functional blocks, which allow assembling smart energy solutions with speed and seamless interoperability. Various sensors, smart metering devices, controllers, smart energy monitors, and electrical grid assets can be, almost literally, plugged into the Kaa cluster and managed in real-time over a secure network connection.



Smart meters



Smart grid automation



Smart lighting



Smart appliances

## Case study 01

# Air quality monitoring based on low-power sensor networks

Customer	Sensor technology manufacturer and service provider
Problem	Deployment of low-cost sensor networks for air quality monitoring in remote areas with no fixed points of Internet access
Solution	Kaa-powered mobile apps that read data from nearby sensors via Bluetooth and then stream it into the Kaa cloud as soon as WiFi or mobile Internet are available



Kaa-powered mobile user applications for sensors



Cloud back-end for air monitoring services to an unlimited number of enterprises



Web dashboard to view the collected data



Configurable alerts and reporting features



Air quality statistics and visualization

## Case study 02

# IoT cloud deployment across a fleet of connected elevators

Customer	Country-wide operator of smart elevators in Asia
Problem	High operational costs of a legacy elevator monitoring solution used by the company, difficult upgrades or customization of the system due to outdated protocols



## Solution

Modern cloud solution that consolidates the view of the customer's elevators across the country



Consolidate asset view



Over-the-air firmware upgrades



Remotely collect and analyze elevator performance



Smart building integration API



Smart alerts, remote testing and troubleshooting

## Case study 03

### Smart, high-security doors for commercial buildings

#### Customer

EU-based smart doors manufacturer

#### Problem

Excessive running costs on security, lack of advanced threat detection and visitor screening mechanisms in modern commercial buildings

#### Solution

Kaa-based smart door applications were integrated with electronic door locks, security cameras, movement sensors, and built-in metal detectors, enabling smart visitor tracking, flexible access rights management, remote troubleshooting and timely firmware upgrades



Visitor tracking and analytics



Local cloud deployment for stable performance



Remote management of visitor access rights



Remote monitoring and maintenance to prevent mechanical failures



Automated alerts on unauthorized access

## Case study 04

# Fleet management for municipal sanitary service

### Customer

One of the largest US-based sanitary service providers

### Problem

Lack of centralized visibility into operation and scheduling of a city's garbage collection fleet; lack of real-time workforce management tools; underutilized smart container technology

### Solution

A Kaa-based workforce, fleet, and asset management solution with custom-tailored management dashboards, mobile user apps, portable IoT devices for vehicle telemetry tracking, and smart container integration



Task management based on workers' status and smart container data



Trip scheduling and routing for drivers



Tracking vehicle movement, location, and fuel consumption









Geofencing, smart alerts, and push notifications



Web-based management dashboards for operators

# Kaa vs. PaaS: Open-source vs. commercial IoT platforms

	Kaa IoT Platform	IoT PaaS
 Technology ownership	100% technology ownership of your IoT solution	Proprietary, limited code control
 Cost of ownership	Services + support	Usage fees + services + support
 New features	Absolute control (open-source)	Limited control, slow response
 Deployment	Any: on-premises, cloud, hosted or mixed	Third party cloud deployment
 3rd party integrations	Open APIs, technology-independent	Vendor-dependent
 Support and services	Dedicated team	Expensive, shared, on-demand resources

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