byNeuron

IoT cloud based data platform

bynubian
Building management & IoT solutions

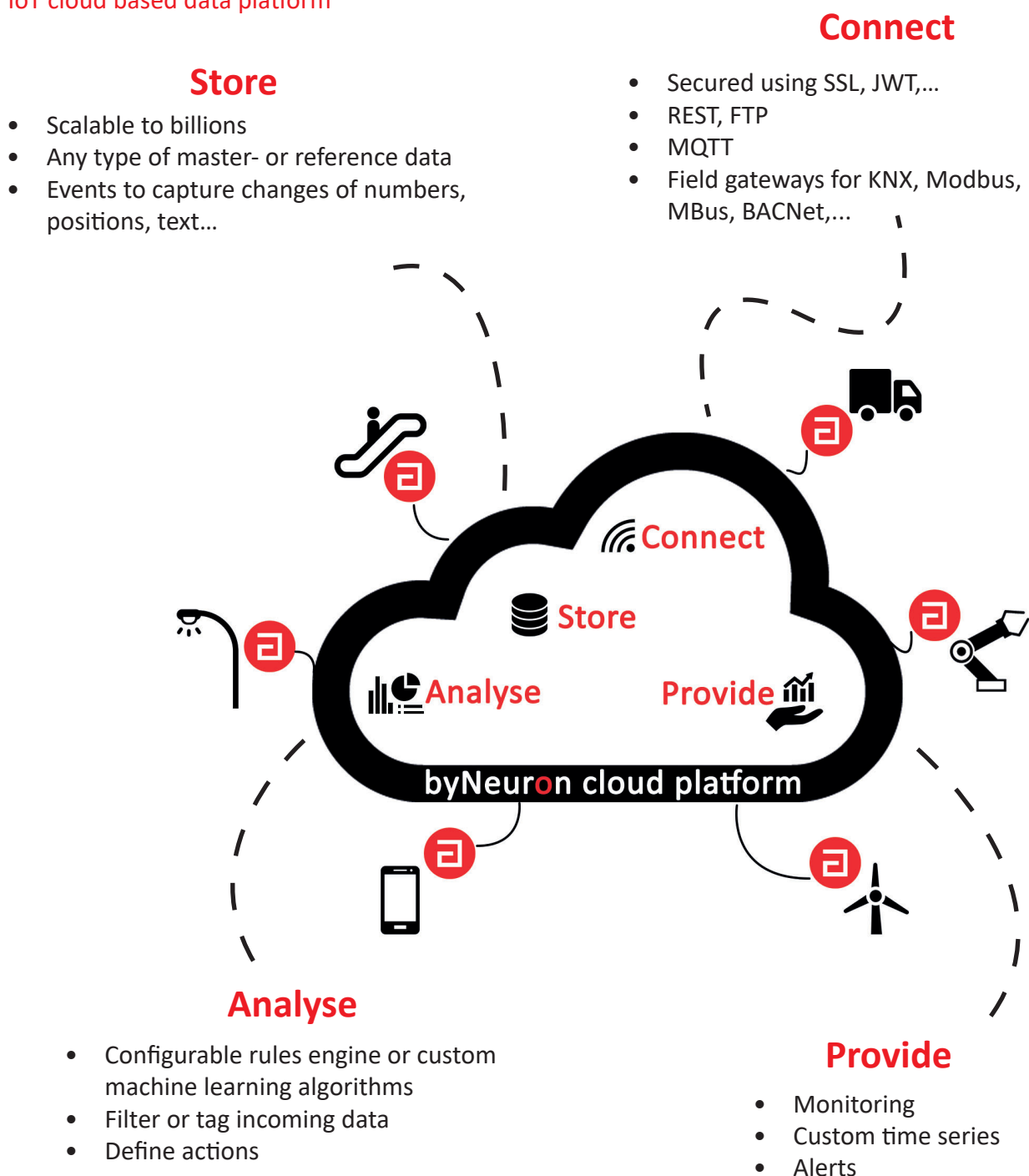**THINKING OF BUILDING YOUR OWN IOT DATA PLATFORM? THINK TWICE!**

Building a performant IoT data platform requires a mix of functionality and skills in the domains of security, infrastructure, big data and analytics. **byNubian** has this expertise in-house.

byNeuron is the perfect IoT platform to connect, control and store the state of your things. One of the unique features of this platform is that the data, before being written to the database, is already processed, non-relevant data is immediately filtered.

byNubian offers *predictive management* based on data analytics, providing a unique solution for the optimal management of complex buildings and data. Using the **byNeuron** cloud platform configured to your needs, you can focus on your business case and getting ahead of your competition.

byNeuron
IoT cloud based data platform

Store

- Scalable to billions
- Any type of master- or reference data
- Events to capture changes of numbers, positions, text…

Connect

- Secured using SSL, JWT,…
- REST, FTP
- MQTT
- Field gateways for KNX, Modbus, MBus, BACNet,…

Connect

Store

Analyse   **Provide**

byNeuron cloud platform

Analyse

- Configurable rules engine or custom machine learning algorithms
- Filter or tag incoming data
- Define actions

Provide

- Monitoring
- Custom time series
- Alerts

THREE STEPS TO GET YOUR DATA AVAILABLE ANY TIME ANYWHERE

Step 1: data capturing

Our performant **byNode** gateways:
- collect data from devices installed in buildings or from other external databases e.g. weather conditions,...
- integrate with the leading communication protocols (e.g. KNX, BACnet, Modbus, IP, LoRaWan, MQTT, ...)
- connect on a highly secured way (using Secure Sockets Layer), with the **byNubian** cloud servers


Step 2: **byNeuron** software

The **byNeuron** cloud platform:
- stores, routes, analyzes and compares your data in real time
- filters non-relevant data immediately
- applies rules, algorithms and experience to identify inefficiencies and faults
- is a highly scalable event factory
- is complemented with a range of web based software applications to monitor your sensors, perform self-service BI, run analytical queries and/or create dashboards

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Step 3: SAAS subscription

Our software runs on secure cloud servers. You only need a browser and a subscription on our Software As A Service environment.
Our data is safely stored and processed in European datacentres. Your personalized **byNubian** environment is available on every PC and mobile device.
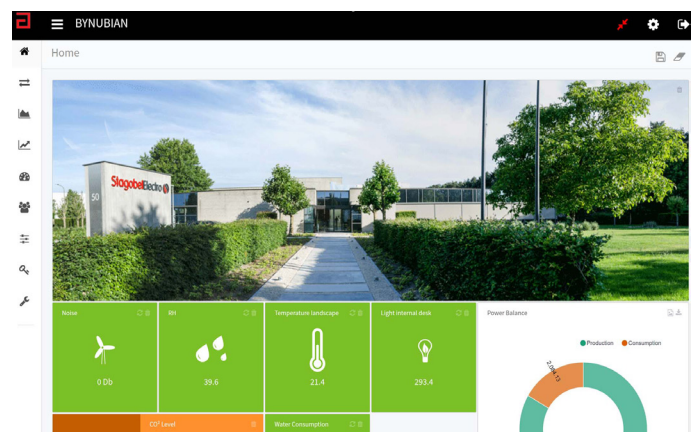
THE THREE MAJOR OBSTACLES TO EFFICIENT ANALYTICS AND ACTUAL COST AND ENERGY SAVINGS

Data management

How to deal with tons of figures?

There is a growing number of sensors and 'things' that perform services, communicate, can be controlled and/or generate data. There is energy consumption data, equipment status data from building operating systems, external data like weather conditions: CO_2, temperature, humidity, ... There is lots and lots of (big) data and the systems are becoming more and more complex.

False friends are everywhere

Real figures do not match (technical) promises.

All these 'things' are seldom measured on actual efficiency. Currently, too much technical charts with theoretical performance is used. Thanks to *predictive management*, real figures can be offered for technical installations in situ. When engineers use the real figures in their studies, a realistic energy level will be displayed. In most cases this will lead to a significant reduction of the energy consumption in a building. And above all, the budgeted and real standards will match!
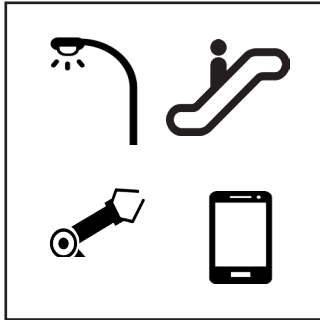
Too low connectivity

Creating a new operating system.
There are quite a lot of performant bussystems, lighting management and HVAC systems available. Moreover, the increasing number of Internet of Things devices can contribute to efficiency. However, today there is far too little synergy.

**OUR SOLUTIONS**

THINGS

Thousands of sensors and 'things' use various communication protocols (KNX, BACNnet, M-bus, LoRaWAN, Modbus, ...) and share information with each other.

CONNECTIVITY

The **byNode** gateways connect all these things to a secure network and adds extra intelligence. The **byNode** also takes care of the communication with the **byNubian** cloud servers.

DATA

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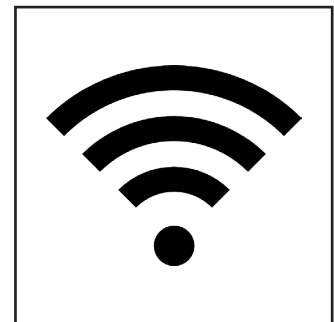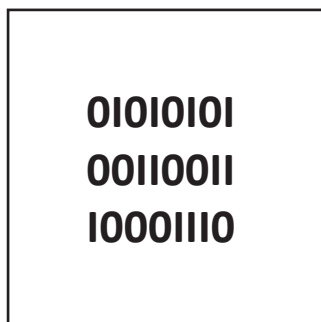
The **byNeuron** mobile dashboards give you a complete overview of your data and can be easily configured with e.g. changing colours to visualize the achievement of certain norms.

ANALYTICS

Meaningful analyzes of events is what we aim for. The **byNeuron** building intelligence application shows you the behaviour of your building/activity in real time, allows personalized analytics and continuous follow-up.

By analyzing large amounts of data we can detect patterns. They give new insights and make it able to predict the performance and behaviour of your building/activity (machine learning).
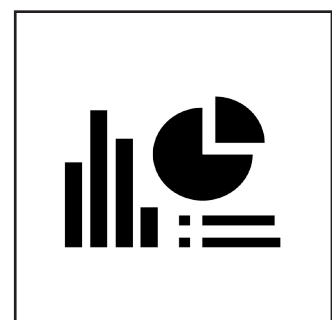
OUR SOLUTIONS

Building management

The **byNubian** technology makes it possible to compare energy flows in buildings in real-time to the planed consumption, detect deviating patterns, constantly check installations for the correct operation, etc.

Building engineers can assume real figures on performance of installations, instead of the theoretical (usually too optimistic) figures. This results in reducing energy costs, improving forecasts, matching supply and demand and anticipating future failures in the equipment. The fault detection of equipment (especially on heatpumps) results in proven and documented energy savings of up to 43%.

We transform your building's operational data into real value, both ecological and financial, creating a truly Building Internet of Your Things.
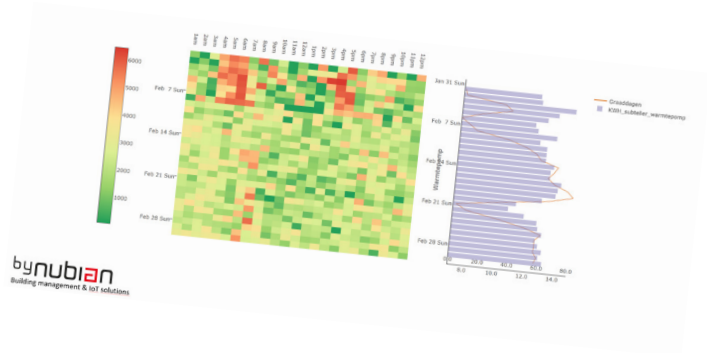
Different business cases

byNubian offers *predictive management* based on data analytics, providing a unique solution for the optimal management of complex buildings and data.

We can implement the **byNeuron** platform in different business cases that need capturing, storing and analysing large amounts of data e.g. e-mobility, smart grids, connected (human centric) lighting, ...

We have an holistic approach for buildings (technology) and evironment, with the human in the centre of it. We believe in strong collaboration with other companies, each with his own expertise.

byNeuron is the perfect solution for today, smart enough for tomorrow.

Smart metering

Predictive management leads to solutions for day to day forecasts. Currently, it is very difficult to estimate the energy consumption for an upcoming period (e.g. the influence of solar and wind energy, fuel cells) which makes it harder to adjust production. For renewable energy a good forecast could result in a cost-effective (perfectly tuned) limited energy storage.

Easyflex, the Powerhouse version of the **byNeuron** platform, provides companies to buy and sell energy directly on the market (sell at energy shortage, buy at energy surplus).

This not only results in cost savings for both the energy supplier and the end user, but above all in a more efficiently, predictable energy consumption and better network stability.
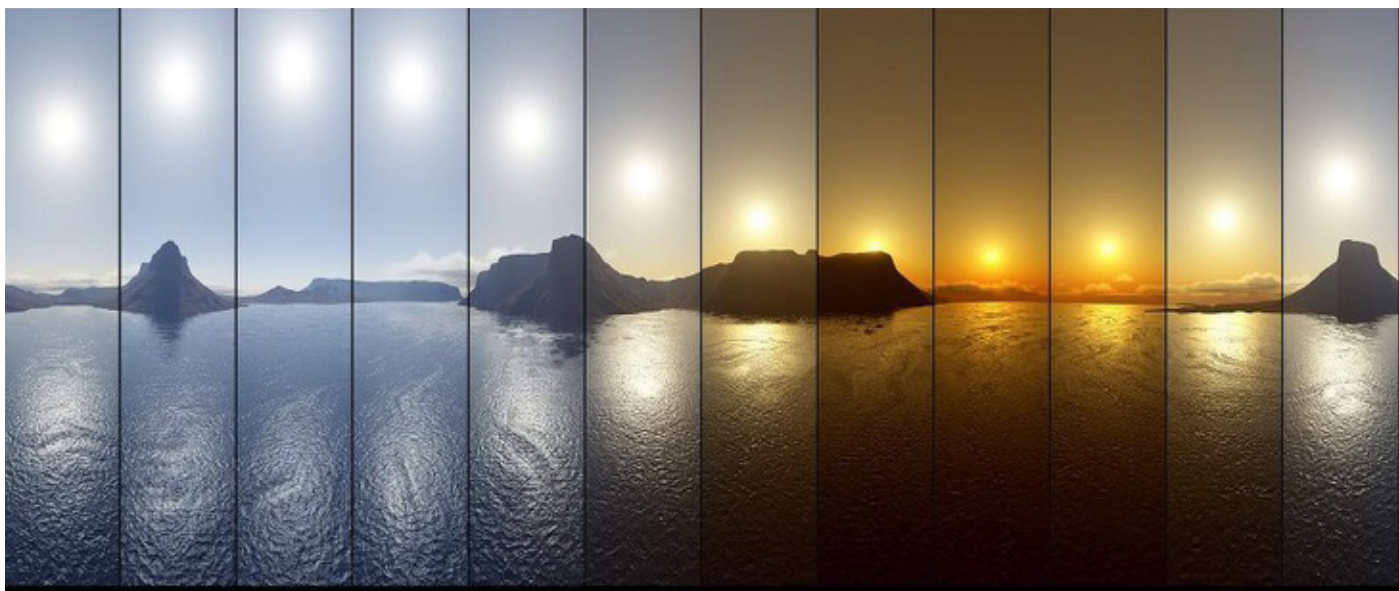
byNubian delivers hardware and software solutions for capturing, storing and analyzing building and sensor data.

Our solutions connect existing building automation systems (e.g. KNX, Modbus, BACnet...) as well as the latest IoT (internet of things) sensors (e.g. LoRaWAN) in a secure way with our **byNeuron** cloud platform. The **byNeuron** platform offers secure storage of data, protocol translation and routing and various software applications to monitor, analyze and improve the performance of your activity.

OUR VALUES

Data privacy

We believe that guaranteeing the privacy and safety of our customers is the key to our joint success.

Scalability

We offer solutions that scale and use the latest yet proven technology for both our hard- and software.

End-to-end

We offer end-to-end solutions and combine hardware, software and services to achieve this.

Innovation/old and new

We don't throw away proven technology but combine it with the newest technology.

Sustainability

We enable buildings to work more intelligently, leading to energy consumption in a sustainable and responsible way.

OTHER byNUBIAN PRODUCTS

Building measurement & configuration	Data capturing	Building monitoring	Building intelligence	Building analytics	Building control	Building automation
KNXNode KNXVision...	byNNode gateways & sensors KNX-Modbus-Mbus-Lorawan...	Busmonitor	Intelligence & dashboards	Analytics, patterns, ref data	Control & access	Automated control & alerting services

byNeuron event factory & cloud platform

API's (MQTT, rest) & connectors (eg for PowerBI)

Microsoft

StagobelElectro
support matters

bynubian
Building management & IoT solutions