# How supermarkets can operate *smarter*

aranet

Supermarkets are held to high standards. They're the front line supplying the public with essential daily products. But in serving their respective communities, these enterprises face daily challenges.



## Food spoilage

One of the foremost problems that supermarkets face is temperature control in fridges. Maintaining certain parameters is crucial to preventing food spoilage and ensuring food safety for customers. Keeping fridges and freezers within proper ranges is a constant battle as shoppers continually open and close doors.



## Legal compliance

Supermarkets must adhere to a wide range of regulations related to HACCP, food safety, energy usage, $CO_2$ emissions, etc. As these requirements are complex and time-consuming, supermarkets would benefit from accurate, up-to-date data.



## Energy saving

With energy costs on the rise, supermarkets need to find ways to reduce usage and keep energy costs low. This isn't easy, as supermarkets have a lot of equipment that requires energy to operate: refrigeration units, lighting, heating and cooling systems, etc.



## Indoor $CO_2$

Store occupation peaks around certain hours. With more people using up the air supply, these gatherings generate high $CO_2$ levels. This gas contributes toward drowsiness, headaches, and exposure to airborne pathogens.

In a modernizing climate, stores and chains are increasingly obligated to reevaluate their approaches to overcoming these (and other) obstacles.

# Solving problems with Aranet IoT

Progress begins with measurement. Each of the factors listed before are surmountable, but only with an appropriate solution. This is where Aranet comes in. Our wireless sensor ecosystem provides continual monitoring, accurate measurement, and reliable telemetry for modern supermarkets.

### Wireless setup

Drilling into walls and running cables through structures are massive undertakings. Fortunately, Aranet networks don't require any construction efforts to pair, install, or relocate.

### Virtual sensors

After a sensor network collects raw data, virtual sensors can be applied to further interpret valuable insights from pre-existing information.

### Troubleshooting

Aranet sensors provide 24/7 monitoring. With this stream of information, alarms can be set for when metrics enter specified thresholds - like temperature, $CO_2$, humidity, etc.

### Cloud access

Everything is manageable through the one-stop solution of Aranet Cloud. This feature gives centralized data access for every connected sensor under a single dashboard. Using an internet connection, any data can be requested and filtered relative to specific needs.

### Data storage

If the internet goes down, sensor data will not be lost. Aranet base stations have internal memory that can store information, sending the data to the cloud once conditions improve. There, information is securely stored for five years. On-demand data access means there's no need to store data on unsecure or complicated 3rd-party platforms.

### Open integration

The Aranet ecosystem has wide-range integration capabilities. Modbus and MQTT protocols allow for onsite integration with BMS and HVAC systems. Additionally, Aranet Cloud API can integrate monitoring data into existing enterprise software solutions.

Save money, decrease food spoilage, and comply with government regulations by investing in Aranet solutions.
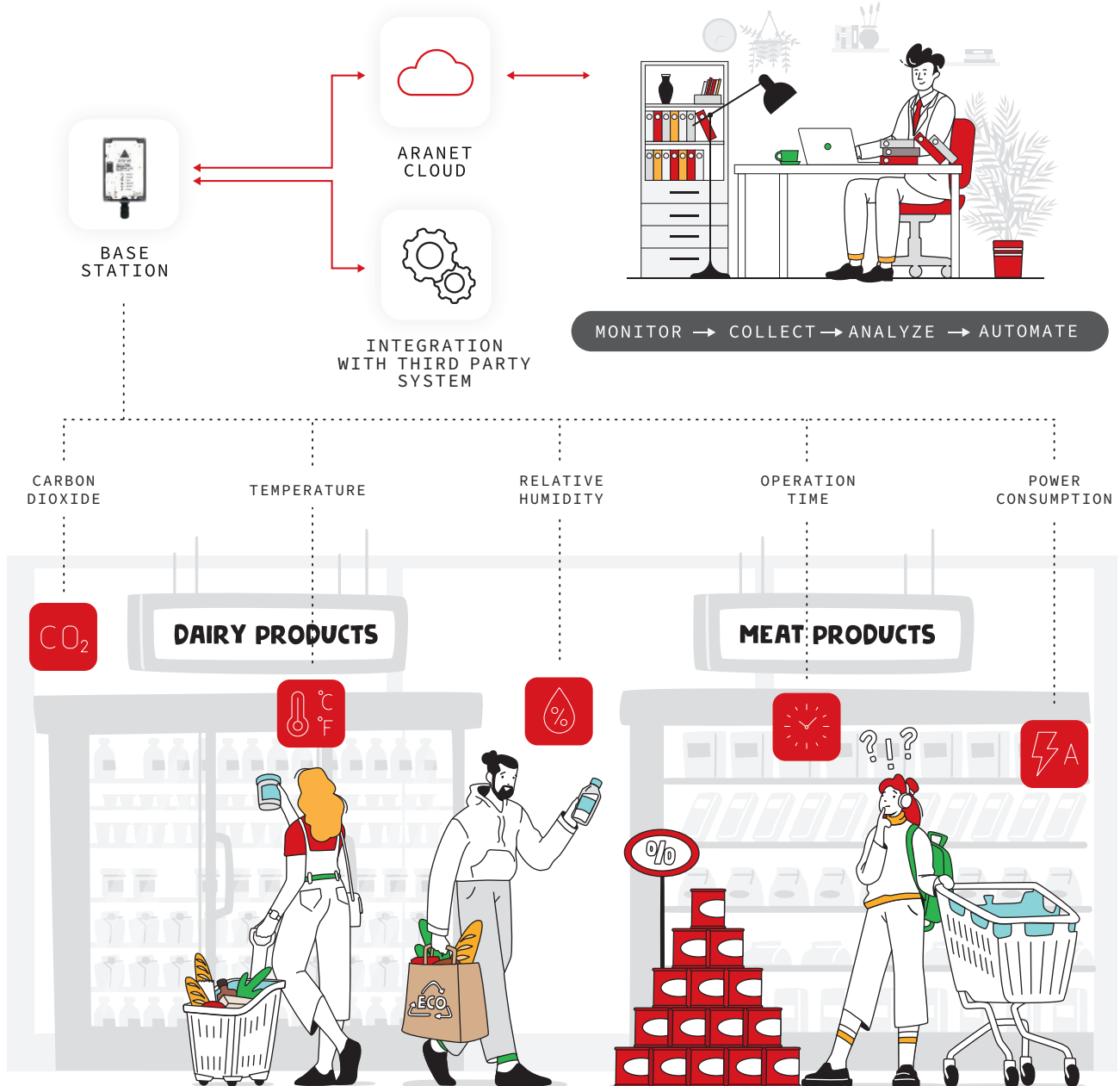
# The Aranet IoT ecosystem

**1.** Specialized wireless sensors are deployed.
**2.** Base stations collect sensor information.
**3.** Aranet Cloud stores data for management.
**4.** Solutions can integrate with third-party IT.

**Benefits**
With building-specific data, owners can track energy usage, identify patterns, and take informed actions to improve flows.

BASE STATION

ARANET CLOUD

INTEGRATION WITH THIRD PARTY SYSTEM

MONITOR → COLLECT → ANALYZE → AUTOMATE

CARBON DIOXIDE

TEMPERATURE

RELATIVE HUMIDITY

OPERATION TIME

POWER CONSUMPTION

CO₂

**DAIRY PRODUCTS**

℃ ℉

**MEAT PRODUCTS**

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