

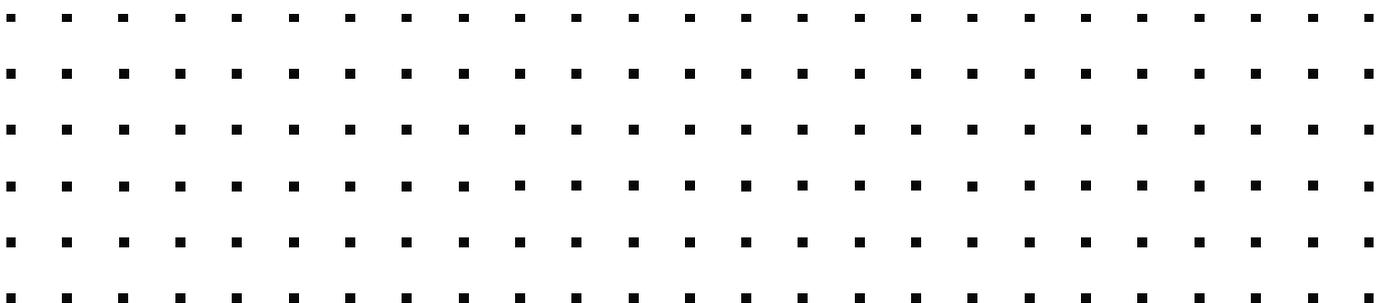


# Aranet Radio benefits

## Aranet Radio vs LoRaWAN

Aranet Radio works in the sub-gigahertz ISM 868/920 MHz frequency band and uses LoRa modulation technology, but not the LoRaWAN protocol.

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## What is Aranet Radio?

Aranet Radio has its proprietary radio protocol which uses LoRa modulation technology but does not use LoRaWAN protocol. Our radio works in the sub-gigahertz ISM 868/920 MHz frequency band. Since Aranet Radio is an isolated communication protocol and is not part of LoRaWAN, it cannot be subjected to disruptions in the LoRaWAN system or external interference in your Aranet ecosystem. You can enjoy an uninterrupted connection.

Aranet radio EU, US vs LoRaWAN EU, US

	Aranet EU	LoRaWAN EU	Aranet US	LoRaWAN US
Frequencies, MHz	868.1 – 868.5	867.1 – 868.5	917.3 – 923.5	902.3 – 914.9 923.3 – 927.5
Spreading factors	8	7 – 12	8	7 – 10
Direction	Up	Up/down	up	Up/down
Packet size, bytes	8/12	16 – 255	8/12	16 – 255

The fixed value of spreading factors ensures predictable results. The one-way protocol is optimal for the use and application, additionally, it significantly **increases battery life** and excludes the possibility of attacks carried out on sensors.

The one-way protocol does take away the ability to transmit data before the set time, which has proven to not be substantial since the predefined measurement intervals for Aranet sensors can be set as **short as 1 minute**, compared to typical LoRaWAN 10, 30, or 60-minute intervals between readings. Smaller data packet size saves airtime, saves battery resources, and **minimizes the possibility that the data packets can be lost** due to the collision with other sensor data transmission in the system or interference with outside transmitters. Smaller data packet sizes mean a lack of interest in these signals to be part of randomized attacks.

## How does this benefit client?

- The Aranet system is closed, autonomous, and fully owned by the client. Integration with your system is available.

From the information above you can understand that the Aranet ecosystem is a secure, closed system that is encrypted and does not depend on 3<sup>rd</sup> party cybersecurity flaws. Aranet Base station is not a simple gateway as it is in the LoRaWAN ecosystem. It has an independent WEB server built-in with sensor data storage for 10 years. In a situation where the connection with the network is interrupted or lost, sensor readings are still stored in the base station's memory and transmitted to the Cloud once the network connection is restored.

A local loop with an actuator controller can be created with MQTT or MODBUS protocols which are not available in LoRaWAN gateways.

Once installed your whole system can be hosted locally on your infrastructure and is thus completely off-grid secure. Since all the elements are within a single software ecosystem, it eliminates the risks of data transmission interoperability issues between elements.

- We take responsibility for the whole chain of equipment.

A United system means that we provide support for any problem which should arise. By buying the system separately – sensors, gateway, cloud – each from a different developer there is no one to ensure the compatibility of the system. As creators of our whole system, our technical support team offers to solve your problems rapidly.

- Single system – easy setup

It takes time and expertise to set up individual systems and ensure their compatibility. Having devices that are designed to be used together eases the installation. Sensor pairing takes minutes and you can have your Cloud dashboards up and running within an hour. For large-scale projects, such simple installation pays off.

- Aranet system is not infrastructure dependent

The system can be installed even in remote or rural territories where other data connections are not available. Aranet sensors have a **very long battery life and can operate for up to ten** years with one set of regular AA or AAA batteries. For the simplest setup, the base station just needs to be connected to mains power.

- Our products are designed and manufactured in European Union.

Aranet IoT ecosystem is a truly unique player in the wireless sensor market. We design, manufacture, and develop a complete solution - sensors, a 3-in-1 base station (gateway, data storage & web server). Our cloud solution – Aranet Cloud is fully running and operating from Latvia, EU. All elements of our ecosystem are **designed, manufactured, and maintained in Latvia, EU**. The sourcing of components covers various countries. Aranet is manufactured by SAF Tehnika JSC with 20+ years of experience in wireless transmission and a global presence in over 130 countries.