

Public / private LoRaWAN networks

Generally about a LoRaWAN technology

LoRaWAN is a Low Power Wide Area Network (LPWAN) technology that enables you to communicate wirelessly over long distances (km) in a bidirectional, safe and low cost way. It is a technology suitable for use in IoT (Internet of Things), M2M (machine-to-machine) and Smart City concepts.

What the lorawan network contains?

- **end nodes** - sensors / actuators capturing data or control other devices
- **gateways (GW)** - device receiving and forwarding data from sensors to a network server
- **network server (NS)** - ensuring coordination of the entire LoRaWAN network
- **application server** - a guest application that processes measured data from sensors or sends commands to actuators

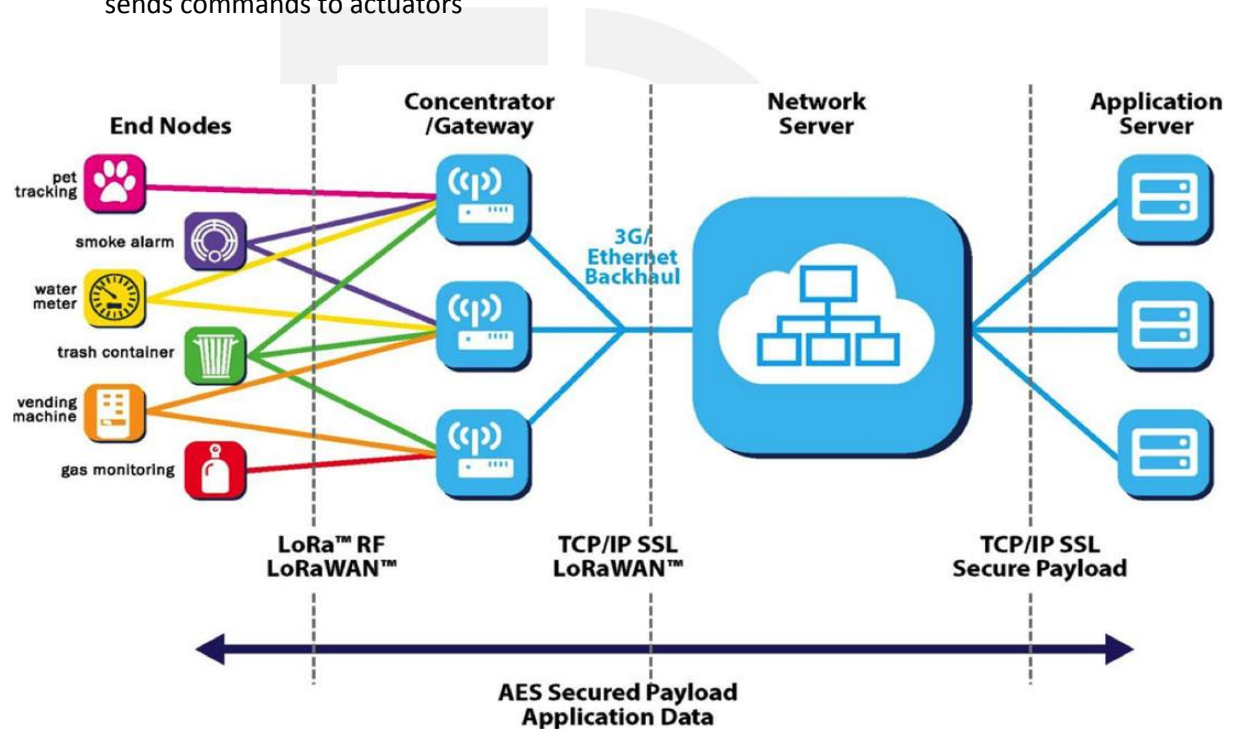


Fig. 1: LoRaWAN Network Architecture

Public LoRaWAN Network

A public LoRaWAN network can be considered as a network that is built to provide the IoT infrastructure to other parties. Access to the public network is generally charged with fees derived from the number of end-user devices registered in the network and also from the amount of data transferred by them. An example of such a network within the Czech Republic is the LoRaWAN network, which is being developed by Česká radiokomunikace a.s.

For remote data collection over a public LoRaWAN network, it is sufficient for the end user to own at least one end device (sensor / actuator), log it into the Czech radiocommunications network and receive data on the application server where it can be stored, analyzed and processed.

The advantage of public networks is the possibility of using the infrastructure in the form of a service, which is charged with the charge for transferred data.

Private LoRaWAN Network

Due to the fact that LoRaWAN networks are operated in Europe at 868 MHz, which falls under the ISM-free bandwidth, anyone can create their own LoRaWAN network. Either for their own use (eg: coverage of a company, municipality or city LoRaWAN network), or for the provision of other parties.

If you are interested in deploying a private LoRaWAN network, unlike public networks, you need to acquire endpoints, run an application server, own a gateway that collects sensor data and run a custom network server that is capable of managing the LoRaWAN network.

The advantage of the private LoRaWAN network is obvious. By building your own network, you avoid data transfer charges. On the other hand, it is necessary to expect higher acquisition costs at the beginning of the project implementation.

