

Fireproof your real estate through IoT smoke alarms with LoRa communication.



Who is responsible for the tenant's fire protection?

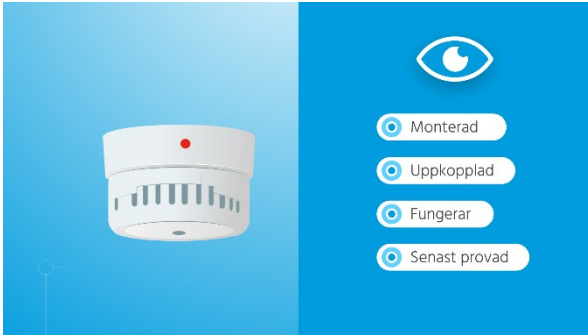
If we look at the law, it says: The owner of the house has an obligation to ensure that there is a reasonable amount of equipment for extinguishing fire, and also an obligation to take the necessary measures to prevent fire and to prevent or limit damage as a result of fire (ch. 2 § 2 LSO).

Smoke alarms are normally considered a measure that the owner of an apartment building is responsible for ensuring that it is in each apartment. Maintenance of smoke alarms on the other hand, for example battery replacement and testing, is usually the tenant's responsibility.

If, as a property owner/manager/caretaker, you want to make sure that your tenants' smoke alarms work - how do you do it?

It can be a challenge to ensure that all tenants have at least one working smoke alarm in their home. Maybe someone takes down the smoke alarm if it gives a false alarm when cooking or when misplaced. How do you know that it is maintained and cleaned or that batteries have power left? It is next to impossible to check that the smoke alarm is where it should be, that it has sufficient battery level to sound the alarm in the event of smoke. At least if you look for a battery-powered smoke alarm that is independent.

The smoke alarm as a connected device.



If you, as a property owner, can see that all apartments really do have a working smoke alarm, it means an enormous advantage and security for all parties. What possibilities are there to create a solution where you can monitor and get information about, for example, when the smoke alarm was last tested, if the battery level is low, if the smoke alarm does not work, if there is a sharp alarm from one or more units within the same apartment or staircase ?

There are several different possibilities for this type of monitoring of a large number of smoke alarms that are installed in one or more properties. Smart smoke alarms that communicate to a central server point, the current data is collected and shared with web portals, mobile apps and/or alarm and monitoring centres, so that you can get an overview of all devices, their status and possible alarm status in one place.

Advantages of a smart LoRa smoke alarm.

Our smart LoRa smoke alarms do their job unnoticed and safely. The smoke alarms have a built-in 10-year battery and a 10-year product warranty. The difference between a traditional smoke alarm and a smart one lies in the extra functionality and communication offered. Our LoRa smoke alarm contains LoRa radio and a temperature or humidity sensor. The smoke alarms monitor smoke development and temperature as well as the operating status of the unit. Once the smart smoke alarms are installed in each apartment and stairwell, they communicate via their radio module over LoRaWAN. Before we explain the technology behind LoRa, we want to highlight the practical and economic advantages of LoRa in comparison to other communications such as Wi-Fi and 4G/5G.

Advantages of LoRa:

- Open standard - available to everyone
- Long range up to 5 km (10 km rural)
- Several actors have built/are building networks with accessible gateways
- Own Gateways can be set up if there is no coverage
- High reliability
- Low operating cost

Some examples of areas where LoRa helps improve community functions are:

- Waste management
- Home care and elderly care
- Parking
- Reading, electricity, gas, water, road surface & bath temperatures etc.

LoRa, Gateways, IoT, protocols — what is it and what is it used for?

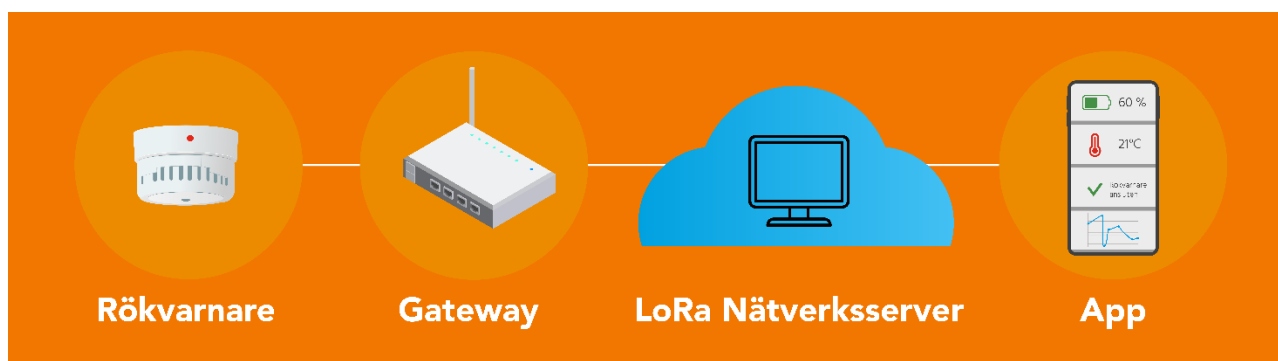
LoRa stands for "Long Range", or long range in pure Swedish. It is a wireless data communication technology that makes it possible to connect sensors to a proprietary network, the Internet of Things (IoT). The range is up to 5 km and thanks to this, it is possible to maintain a high level of community service even in hard-to-reach places.

Gateways

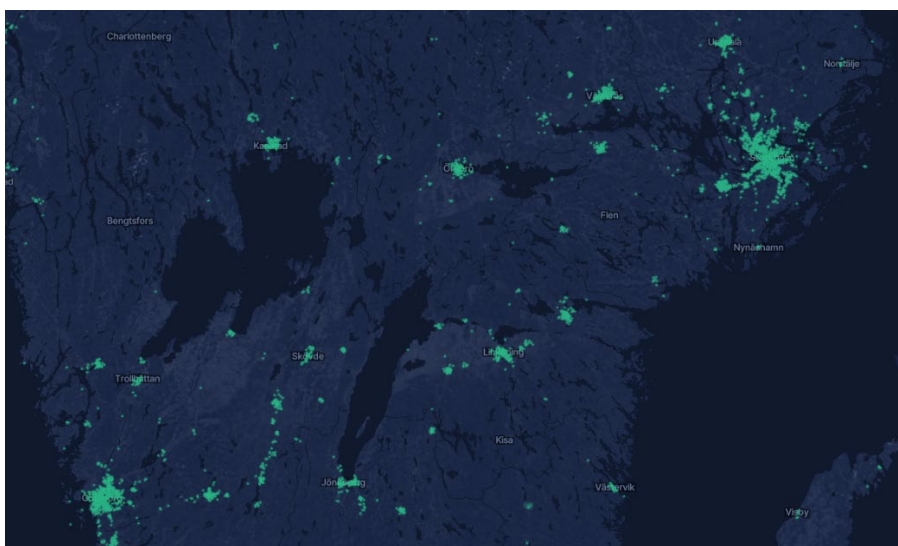
Signals from sensors are received by gateways that are assembled into networks. These often consist of both physical data components and software (hardware & software).

LoRaWAN is a protocol layer designed by the LoRa Alliance that defines the naming and structures of a system. The purpose of this is to increase compatibility among devices, as opposed to proprietary protocols that are manufacturer-specific. LoRaWAN sensors can communicate with any [LoRaWAN gateway](#). Users can thus choose between different options that suit their needs or invest in a system from companies without having to worry about compatibility in future expansion.

LoRAWAN – schematic sketch:

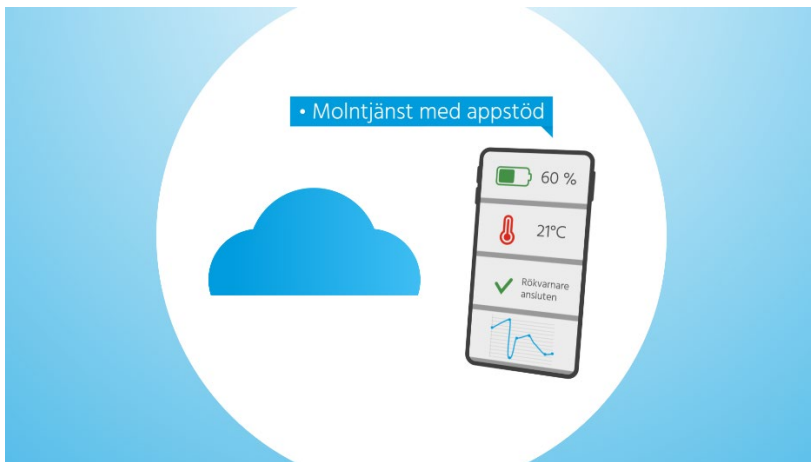


Coverage map as an example in central of Sweden:



User interface - visualization

Below we show an example of our App where you can see different types of data. The information can also be sent to an existing property system as we use an open standard. It all depends on needs and integration.



- Status update 1 time/day with latest events, as well as operating time
- Battery voltage radio card
- Latest temperatures of the day (every two hours) 12/day
- Type of alarm connected (smoke/heat)
- Test button, last used
- Sharp alarm with temperature values allows you to follow the progress of the fire
- Low battery from the alarm
- Technical error and "end of life" from the warning
- Option: humidity sensor

Installation:

Scan the alarm's QR code

Register new unit with location, address, apartment if applicable. GPS position.

Installed and ready under 10 minutes. No cables are needed - everything is wireless and battery powered.

What operating options are available.

- Under your own authority in the municipality where you have your business
- Under your own auspices in your own organization
- Subscribe to the service from Deltronic or via another operator.

Summary of LoRa connected smoke alarms.

You ensure that the smoke alarms that are installed in the specified location are indeed in operation and working. Should smoke develop and, in the worst case, fire, you and the residents will receive immediate notification via alarm. The alarm centre and/or emergency services can see in real time where the fire started and how it may spread.

The solution is stable and easy to implement, and operating costs are low.