

# Remote monitoring overview

Rappt.IO supports the **remote monitoring of devices (traps, bait stations etc) equipped with sensors**.

The sensors are typically small, battery-powered devices that detect the state of a trap (open/sprung) or the bait levels in a bait station. They transmit this information, normally over a LoRAWan (low-power, wide-area network) radio network, to a gateway or hub, which will then forward the information to Rappt.IO via the Internet.

Sensors are becoming increasingly inexpensive and batteries can last for 2 to 5 years.

The distance a sensor can transmit is very dependent on the terrain. 15km or more is possible over LoRaWan, but 5km to 10km is typical.

The advantages of having sensor-equipped traps or bait stations are many:

- The work effort in servicing installations can be significantly reduced, especially with live capture traps - you only need to service traps that have caught something.
- They can provide critical early detection and incursion information for predator-free areas.
- They are useful for managing contractors and staff. Project administrators can see which traps and stations have been serviced, and when.
- Sensors are very effective for engaging landowners and volunteers - people are much more motivated to service traps if they know there has been some activity.
- For gas and self-resetting traps, it can provide immediate information on activity and can be used to make decisions on placement.

## Remote monitoring products and systems

If you are interested in setting up remote monitoring, you have a few options. For those with a technical bent and interested in building your own sensors or networks we have information on building and **integrating LoRaWan sensors** with Rappt.IO and **configuration examples for gateway devices**.

There is also a range of off-the-shelf products available from various suppliers:

WheroNet IoT

<https://wheronet-iot.co.nz/>

WheroNet sells sensors (that can be retrofitted to most standard traps), and pre-configured, solar-powered gateways. These are open LoRaWan devices (no subscription costs).

Predator Free Franklin

<https://predatorfreefranklin.nz/shop-pff/>

PF Franklin created the "Tāwhiti Smart Cage" which has a Zip autolure and LoRaWan sensor pre-installed. To use this you will need to have a gateway within range - they may be able to **help you with that** if you are in the Franklin area.

Econode

<https://www.econode.nz/>

Econode provides the pre-built SmartTrap and sensors that can be fitted to a range of traps. Their product is widely used on a range of predator control projects around New Zealand.

Encounter Solutions

<https://encounter.nz/>

Encounter Solutions provides the Celium platform which is a solution of sensor-equipped traps and network hubs. Their product is widely used on a range of predator control projects around New Zealand.

eTrapper

<https://www.etrapper.co.nz/>

eTrapper provides trap sensors, and also a bait station sensor device that measures the level of bait in Philproof bait stations. This information is transmitted to Rappt.IO and allows you to view the bait levels of your stations on the website and app.

