



Sm@ll Ruminant Technologies

# Virtual fence

## Need:

- Control where animals are allowed to stay and/or graze
- Monitor animals on pastures and get notification of events: i.e. animals crossing boundaries and unnormal behaviour
- Allocate new pasture without having to move physical fences

## Aim:

To control whereabouts of goats and sheep without putting up physical fences

## Description:

A virtual fence collar can control the whereabouts of animals. This can be needed for a number of reasons:

- Fence in animals without physical fence
- Fence animals out from an area
- Control whereabouts of animals
- Alerts on behaviour of animals
- Information about where animals graze/use of landscape
- Move to new pastures/edit existing pastures without physical fencing work

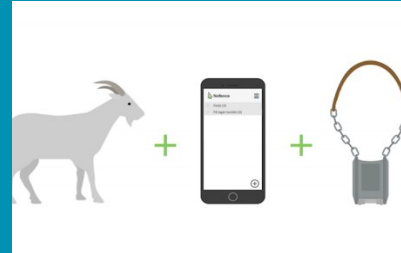
Animals must be provided a learning phase as described by the tech provider.

The boundaries of the pasture are set with a smart phone in the app belonging to the solution. The animal wears a collar with GPS and when the animal approaches the virtual boundary, it will first hear repeated sound signals (audio cues) before finally receiving an electric stimuli through the collar if it crosses the virtual fence line.

The animal owner gets a message in the app on animal behavior i.e. escaped animals and electric stimuli. The frequency of reports from collar can be adjusted in the app.

The boundary of the allocated pasture is a zone rather than a line. Precision depends on terrain (steep terrain gives less precision) and coverage by satellites at any given time.

The user can see in the app how much power is left in each collar. Some users report that their batteries last all summer, while others say they have to take their animals home to recharge their batteries. The collars also have a solar panel to charge battery.



## Country:



Norway

## Production System (dairy or/and meat sheep/goat):

All

## Category of Animal (ewe, goat, replacement, lamb, kid):

Adult sheep and goats

## Source of Information:

[www.nofence.no](http://www.nofence.no)

Personal communication with Norwegian farmers

## Attachment/Links:

[Sm@RT solutions Norway - virtual fence \(youtube.com\)](https://www.youtube.com/watch?v=dledXen7MLA)

<https://www.youtube.com/watch?v=dledXen7MLA>

[https://www.youtube.com/watch?v=jwDdIK\\_4s8s](https://www.youtube.com/watch?v=jwDdIK_4s8s)



## How to Implement:

- Buy virtual fence collars for all adult animals.
- Download app on cellphone.
- Provide suitable learning facilities according to product guidelines.
- Assign in product app the recommended fence borders.

## Expected Benefits:

- Saves time of putting up fences.
- Gives access to suitable and safe grazing areas, also where physical fencing would be challenging.
- Gives insight in animals' movements
- Gives alert when animals leave the authorised area, as well as if animals are moving less than normal

## Costs and Challenges:

- +/- 200 € per collar plus subscription
- Subscription required: Yes, daily ~ 0,40 - 1 € per collar
- Need smartphone to receive alerts and location
- Need mobile coverage to get messages from system. However, the virtual fencing system on animal works without mobile coverage.
- Battery capacity depends on frequency of location reports, terrain and animal behaviour
- Precision of fence boundaries can vary
- GPS collars are only for adult animals, not for lambs



- Value for money (for this type of benchmark farm)?  
Non
- Recommend this tool/technology for use on other types of farm? Yes

*The best thing about the virtual fence system is that I always know the whereabouts of my sheep. It's very interesting to see how they use the mountain pasture. I used to have a lot of stress with sheep leaving the grazing area at the other side of the mountain, but with the virtual fence system I'm in full control. I think I would have given up sheep farming without it.*

SHEEP FARMER FROM NORWAY

*This tech works for me because I can see the location of my animals and keep them in a chosen area without physical fences. The GPS is precise to find my goats in a scrub area.*

FARMER FROM FRANCE



**It would take 2-11 years for 61-98% adoption in Norway**



[www.smartplatform.network](http://www.smartplatform.network)

