



# Quantum cryptography on the standard fibre network

## Drones equipped with thermal cameras and predator urine will help to reduce the number of fawns killed by farm machinery on agricultural land.

Every year in June, thousands of fawns are killed in the fields when they get run over by large farm machinery at harvest time. The accidents mostly occur during the summer when the animals migrate to the edge of wooded areas.

"The problem today is that during the first week or two, the newborn fawns usually lie flat on the ground when an agricultural machine is approaching. This makes it extremely difficult to detect the animal and prevent a collision. Even for a hunter with a trained dog, it is an almost impossible task since fawns have no scent," says Senior Researcher Rasmus Nyholm Jørgensen.

But according to the first results from a research project to monitor deer and fawns, the problem may be greatly reduced by using drones equipped with thermal cameras and predator urine.

### Urine makes the mother call out to the fawn

The idea is that the drone identifies specific fields where fawns are hiding and then sprays urine in precisely this area. The smell of the predator urine alarms the mother deer which then calls out in the twilight.

"Fawns protect themselves by hiding, pressing themselves against the earth, and lying perfectly still. The only thing that can get them to come out of the field is when the mother calls," says Senior Researcher Jørgensen.

He is one of the main designers of the drone and he has already carried out the first test flights with different predator scents. Canadian lynx urine has proved to have the greatest deterrent effect to date.

### Can improve food safety

Aarhus University has taken out a patent on the technology to spot animals and spray the fields with urine, and will apply for funds in the coming time to further develop the spray method.

"We'd like to reach an altitude of right up to 40 metres, and we therefore need to find out whether we can use an additive so the urine doesn't blow in all directions when we spray," says Senior Researcher Jørgensen.

He estimates that the drone technology has great commercial potential both in Denmark and abroad, partly because it can boost food safety. Dead animals in the field may contaminate the food, which can lead to bacterial

poisoning for whoever ends up eating it.

The researchers goal is to be able to develop a complete workable solution, ultimately reducing the number of animals killed on agricultural land.

"Many farmers experience these fatal situations. We'd very much like to help them and believe that we can do so," says Senior Researcher Jørgensen.