

Stop Thief!

High tech solutions from Germany to increase timber security

When timber theft rose to a seven figure sum in euros in just one year, one German woodland owner decided enough was enough. He wanted not just to prevent further theft, but also to turn the tables on the thieves. He brought in a security company that could solve the problem using an innovative solution.

The culprits appeared to be drivers, who would often return to the woods following their legitimate work to take another load, taking the stolen timber to a particular sawmill that was prepared to receive stolen goods. The costs of the security operation have quickly been covered by the savings it made.

Timber theft has been increasing in Germany, Austria and Switzerland, one reason being increasing energy costs. There are many reports and forums in the internet on the subject. One newspaper reported a particularly serious case in 2009, saying the thieves had been equipped with heavy machinery, and had felled 1300 cubic metres of pine, logged it and transported it from the site in

20 lorry loads.

Even when thefts are noted, the clear-up rate is low. Proof generally becomes available only when the culprit is caught in a subsequent incident. In the forest industry, with its multitude of log piles, this is seldom possible, since the number of personnel required to do this is prohibitively high.

So this was the situation that confronted the security company. They decided to look for a technological solution, and contacted Enaikoon GmbH in Berlin, which specialises in electronic surveillance.

Movement alerts and continuous tracking

The aim was to set up a system that reported any movement of a particular stem in the log pile, and also monitored its location without interruption. The experts in Berlin were unable to come up with an off-the-shelf solution, but within three months they had developed a tracking module consisting of four units: a high capacity battery,



Picture showing the tracking module, which is normally inserted into a hole drilled in the end of a log.

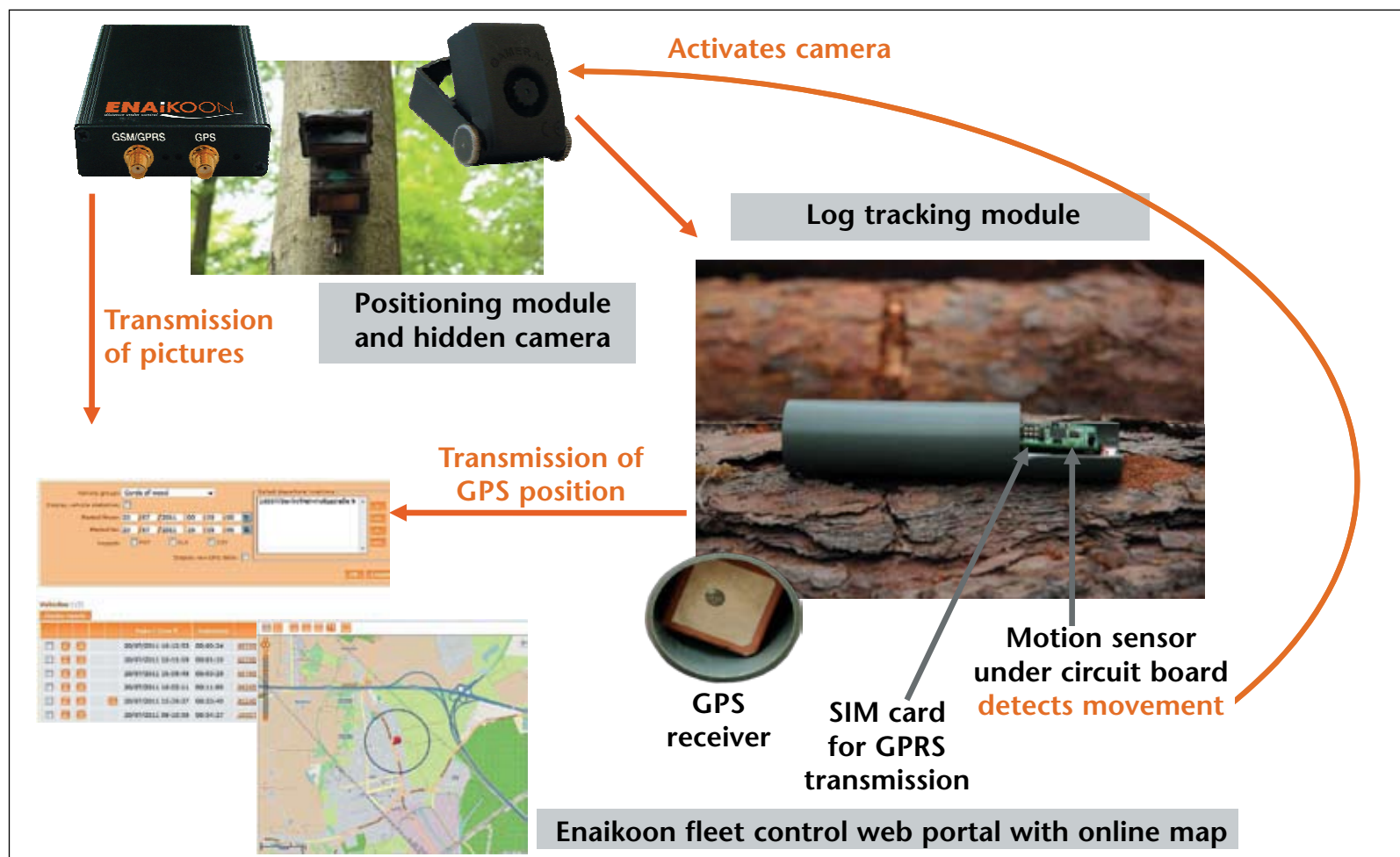
a motion sensor, a GPS receiver and a transmitter to raise the alarm and signal its location.

The energy supply had to be capable of lasting several months, since it was not known how long after delivery the device would be installed. The module consisted of a robust plastic pipe, about 5cm in diameter and 30cm long. Enaikoon produced some 200 of them to enable every log pile in the wood to be monitored, since no one knew where the thieves would strike next. The motion sensor can have its sensitivity adjusted to avoid it being set off by every fir cone landing on the log pile.

Alarm module hidden in the log

The security company drilled into the end of one log on each pile and inserted the module. A thin disc of wood that had been prepared earlier was then positioned to prevent the module from being seen, whilst still enabling the GPS receiver to maintain a sufficiently strong signal from the satellite.

To obtain additional evidence, the security experts installed owl boxes at selected loading points. These contained a positioning module with a GPRS connection to Enaikoon's server as well as two cameras with infra red lights and long-life batteries.



As soon as the motion sensor detected any movement, it activated the cameras via the server. These were able to record the scene with a view to identifying culprit.

Removing the tracking module

When a pile of logs is to be legitimately moved, employees of the security company remove the hidden tracking module beforehand. This can then be installed in another log pile.

With a diameter of 3.5cm and a length of 20cm, the latest generation of modules are significantly smaller than previous models. They can quickly help to solve problems such as timber theft, even in places that appear difficult to monitor, reducing losses to businesses.

Trees' genetic fingerprint

For a couple of years there has

also been a procedure that enables the source of stolen timber to be identified. The Bavarian Office for Forest Seed and Plant Breeding* in Teising has developed a method whereby trees' 'genetic fingerprint' can be used to give a definite match between a log and the stump that remains in the forest. The genetic make-up (DNA) is unlocked in an almost completely automatic procedure. This can be used to clear up any doubt as to whether a stem originates from a particular stump.

If all that is known is the whereabouts of the woodland, all stumps there have to be investigated, at a cost of around €20 each.

To date the test works for beech, sycamore, cherry, fir, spruce and poplar.

Peter Richter

www.enaikoon.de

* www.forst.bayern.de/asp/



Axel Joensson

Log counter

Want to keep track of exactly how many logs you have? This device from Visiosens GmbH in Göttingen will count them for you and record the results.

Seen here mounted on a forwarder, it is also available as a hand-held device. It is rugged and waterproof, and works for log piles up to 4 metres in height.

The software runs on standard PCs under Windows. To use the system, all that is necessary is to pass along the log pile at walking pace. The results are available immediately in the form of a panoramic picture (see below) with accompanying documentation. The counted logs are all marked in red on the picture.

The system is sold in Germany by Ponsse dealer Wahlers Forsttechnik, www.wahlers-forsttechnik.de. It costs between €2000 and €2500.

