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Sensor cable detects low-level drone fly-bys

By PTI | 26 Mar, 2015, 05:57PM IST

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BERLIN: A new sensor cable can detect a low-flying drone passing overhead and also allow for monitoring of fenced-in areas, such as airports, nuclear power stations, industrial sites, or private plots of land.

The sensor cable responds immediately as soon as someone tries to climb over or cut through the fence, providing information on the precise location of the security breach.

The thin cable developed by a team of experimental physicists, led by Professor [Uwe Hartmann](#) at [Saarland University in Germany](#), contains magnetic field sensors and can be easily installed on perimeter fences of all kinds.

The research team is currently working on developing the system so that it can recognise the cause of a disturbance and automatically identify false alarms triggered by wind or animals.

If someone tries to tamper with a fence, or if they try to climb over it or cut the links with bolt cutters, they cause a vibrational disturbance.

The movement of the metal fence as it swings back and forth, the motion of the metal cutters or even the trespasser's belt all influence the Earth's magnetic field.

The new type of surveillance technology exploits these changes.

"Our magnetometers (magnetic field sensors) are highly sensitive and can reliably measure even the smallest of changes in the ambient magnetic field," said Hartmann.

The sensors are even able to detect when a drone flies close by overhead - provided that the drone contains metal.

"The sensors can detect disturbances in the surrounding magnetic field, including the magnetic field above them, with a range extending several metres," said research assistant [Haibin Gao](#) who is part of Hartmann's team.

The sensors have a low power consumption and are unaffected by rain or fog.

"The sensors function independently of the weather and this gives them a significant advantage over other surveillance techniques, such as cameras, where moisture is often a problem," Hartmann said.

The miniature sensors are networked and any change that they register is immediately transmitted to the analyser unit.




The sensor cable responds immediately as soon as someone tries to climb over or cut through the fence, providing information on the precise location of the security breach.

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