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Ground-based surveillance and classification radar for wildlife protection

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Abstract

Wildlife poaching has become an increasingly large problem over the last decade in southern Africa. There have consequently been worrying declines in rhinoceros population levels. As part of a multi-year effort to investigate and develop technology to aid in the prevention of poaching activities, a C-band phased array radar, with integrated ground target classification capability, has been produced. In a field trial that took place in the Kruger National Park Game Reserve in South Africa, it successfully detected and classified human and animal movement at ranges of up to 10 km. The misclassification rate of humans was less than 7%, and non-human movement, predominantly from animals and vehicles, was incorrectly classified as human 3.8% of the time. This shows that modern radar, without assistance from other sensors, has great potential to contribute towards the preservation of scarce wildlife resources.