

CASE STUDY

ANTI POACHING



> **Protecting wildlife and flora in game parks and conservancies**

Fight against illegal hunting or capturing of wild animals and fight against illegal harvesting of wild plant species, called anti-poaching, is becoming more and more necessary around the planet due to the increase of malveillance acts during the last decades. The security personnel and wildlife rangers deployed on the field need reactive and robust solutions to get a day & night situation awareness and an early warning of poachers intrusion not only to protect wildlife and flora but also to protect themselves.

SPYNEL panoramic thermal imaging cameras are cost effective equipment to ensure all weather, day/night long range surveillance and ensure detection and tracking of intruders, poachers or traffickers outside or inside the fences (or virtual fences) surrounding large natural areas.

> **Background**

Reduction of animal population in the wild could result in possible extinction, defaunation of forests or agricultural areas may reduce considerably the species diversity. Wildlife and flora are under multiple threats. Be it caused by human tradition or culture, by survival for food in poor or armed conflict areas or by organized gangs of professional poachers, these resources require to be protected.

The lack of surveillance capabilities on such very large geographical areas and the generally limited number of people appointed to conduct surveillance patrols represent a serious hint to the real time detection and apprehension of intruders.

With their **automatic multiple threat detection/classification at long-range and fast deployment capabilities**, SPYNEL thermal imaging cameras bring significant advantages to ensure the wide area surveillance of game parks, lodges, natural parks and conservancies

HGH SPYNEL-X IR panoramic sensors are especially adapted to the surveillance of these areas :

- Perimeter surveillance outside the surrounding fence
- Detection of any kind of vehicle approaching the protected area
- Tracking of the intruder inside the perimeter if they succeeded to cross the fence
- Detection, tracking and classification of simultaneous targets by CYCLOPE software
- AI algorithms in CYCLOPE to eliminate false alarms related to dust clouds or vegetation
- Real-time 360° situational awareness for effective decision making
- Several hundred of squared kilometers are under surveillance by just one camera
- Support harsh environment (hot&cold temperature, dust, sand storm, rain or fog) without interruption
- Client-Server architecture with multiple cameras connected to a remote centralized control center
- Seamless integration of SPYNEL data into third party VMS software and other security sensors
- Evidential videos for replay of past events and forensics analysis
- Day & Night 24/24 - 7/7 operations
- Fast and straightforward installation
- Robust equipment with no specific preventive maintenance
- Easy to use after a simple training for console operators

> Solution

SPYNEL-X IR camera uses a continuously rotating sensor to produce a 360 degree image with 120 megapixels every 2 seconds. Essentially the SPYNEL camera operates like a high definition “optical radar”, providing operators with **clear, reliable and actionable data**.

SPYNEL IR technology is completely **passive** and and it can **detect, track and classify any intrusion**. It can operate in **total darkness**.

The CYCLOPE software relies on powerful algorithms **perfected to minimize false alarms due to dust clouds or vegetation blown by wind**. The high thermal sensitivity allows for detection of the **smallest** threats at a great distance. No event is missed: people walking slowly or crawling, even when camouflaged.

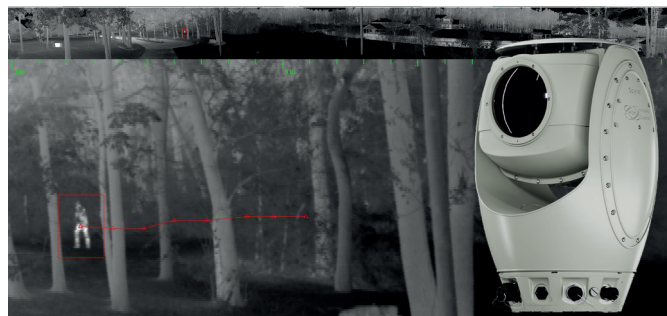


Thermal image of an elephant

Radar vs Panoramic Thermal Imaging Camera

Surveillance solutions with Radar & PTZ cameras, if used in areas populated with many animals, will generate numerous radar plots and frenetic activity of the operators to cue the PTZ cameras to the detected plots in order to confirm or to dismiss the threat, before raising an alarm to the security personnel.

Unlike radar, the SPYNEL IR **real-time visual information** facilitates the understanding of the situation. **SPYNEL detects, classifies and tracks an unlimited number of intruders and can display all images simultaneously on monitoring screens to the operators** who can immediately raise or not a justified alarm.



Spynel-X sensor - human detected and tracked in the wood

SPYNEL sensors use the latest thermal imaging technologies providing **unparallel high resolution 360° videos, motorized tilt of spinning head and Artificial Intelligence**. SPYNEL sensors also enable reliable detection and tracking of small and fast moving targets as well as low air targets, which are typical limitations of radar.

> Conclusion

The main challenge in the protection of game parks, natural parks or conservancies is the **ability to visually cover a very large area in real-time, 24/7 and in any weather conditions**.

As a standalone system or being part of a complete surveillance solution, HGH SPYNEL thermal sensors **enhance situational awareness to protect the wildlife and flora against a large variety of threats**. SPYNEL have unique capabilities to provide a comprehensive surveillance of both land and sky.



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