INSTANT DETECT MONITORS AND PROTECTS RARE SPECIES AROUND THE GLOBE

Iridium® helps enable conservation efforts around the globe with the Instant Detect system by capturing and transmitting data in near real time from remote areas.

THE CHALLENGE

In recent years we have seen a massive increase in the illegal wildlife trade. In the past 40 years 95% of the world's rhinos were killed. More than 100,000 African elephants have been poached in the last three years and 97% of the world's wild tigers have been lost in the last 100 years.*

The **Zoological Society of London** (ZSL), a near 200-year old charity dedicated to conservation science, is trying to find solutions to this complex issue. Their mission is to achieve the worldwide conservation of animals and their habitats. An objective of ZSL's work is to protect endangered species from threats such as poaching, illegal extraction and habitat loss. Monitoring and protecting species can be challenging as ZSL often works in very vast, remote and difficult to reach locations.

THE SOLUTION

To overcome this challenge, ZSL – using its lead technology developer Cambridge Consultants – has developed a system that can capture data remotely and transmit it in near real time from any part of the world. It is called Instant Detect and is enabled by the global Iridium® network.

For years scientists have been manually collecting and analyzing data using their work to inform policy decisions. With the use of this technology, data can be collected on a much larger scale to monitor rare species and help tackle poaching.

The system concept was developed by ZSL, **architected and designed** by Cambridge Consultants, and involved other partners including Seven Technologies Group and Wireless Innovation Ltd, as well as Iridium. It is used for both wildlife monitoring and protecting animals from poaching.

The system is made up of several key components. It includes a network of camera traps that are preprogrammed to send images to a specific central satellite node via radio waves. The node also accepts alerts from magnetic and seismic ground sensors which are used to detect human presence. When images and alerts are received by the central satellite node, a computer sends the data via the Iridium satellite network to rangers or approved users located anywhere in the world.

Photo by Olivia Needham

THE IMPACT

The Instant Detect system was successfully deployed in Antarctica to monitor **Adélie penguins** and has been actively sending images every day and in near real-time since January 2014 without requiring any servicing– even during the Antarctic winter. The cameras captured the return of the penguins to the coast after 9 months spent offshore.

Photo by Alasdair Davies

In Fall 2014, ZSL undertook a major deployment of Instant Detect systems in Kenya's Tsavo West National Park to help tackle rhino poaching. The system is being used successfully as part of Kenya Wildlife Service's regular anti-poaching activities.

Jamie McCallum, ZSL's Instant Detect program manager, says: "The reliability of signal and transmission from the Iridium system has been astonishing. The whole Instant Detect project was based on the idea that we can transmit data from anywhere and without Iridium that would not have been possible."

ZSL is dedicated to tackling the illegal wildlife trade and

the Instant Detect system, enabled by the global Iridium network, can be an important part of that effort.

The Iridium Global Ecosystem

Solution Providers: Cambridge Consultants, Seven Technologies and Wireless Innovations

Enabling Product: Instant Detect

Enabling Product Vendors: Cambridge Consultants is a global product development and technology consultancy firm providing outsourced research and development services.

Wireless Innovation offers consultancy and bespoke innovative solutions to real world business challenges with focus on SCADA, Telemetry and M2M.

Seven Technologies Group is an award-winning, ambitious company with a proven track record of bringing successful products and services to market. The company is built around a first-class engineering team involved in the design, development and manufacture of rugged electronics devices.

Iridium Core Component: Iridium 9602 SBD Transceiver

Iridium Key Network Capability: Iridium's capability of providing global, low-latency, two-way communications makes it the ideal solution for capturing and transmitting data for wildlife monitoring and protection applications.

*Numbers are taken from a presentation of the Zoological Society of London at the Iridium Partner Conference in Feb 2015

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