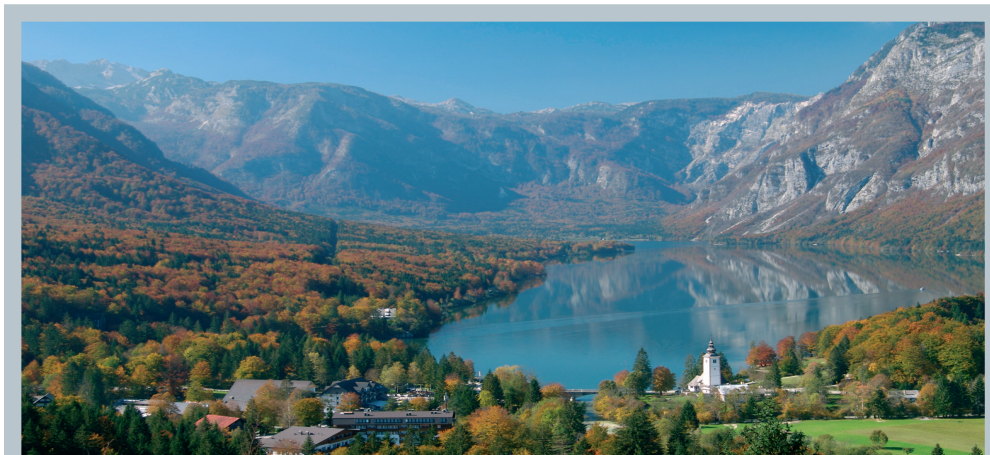# Aprisa XE from 4RF helps protect Slovenia's forests

Fires are one of the biggest threats to the wellbeing of Slovenia's forests: in 2003 alone, 65 fires ravaged an area of approximately 2,000 hectares. When the Government of Slovenia decided to implement an early warning 'fire watch' system for early detection and response, they needed a solution that provided carrier-class availability for the real-time mission-critical application. The Aprisa XE point-to-point microwave radio from 4RF was the only product that could meet the demands of the application, and the Aprisa XE network now covers an area of more than a thousand square kilometres.

Government of Slovenia
SLOVENIA

Slovenia

Karst region

"
We chose the 2 GHz Aprisa XE solution because it is the only product on the market capable of providing the capacity, the security, the link distances and the near-non-line-of-sight capability needed to complete the network within budget. With the Aprisa XE we have the performance necessary to support the application. We now look forward to extending the network to protect more of our national forest.
"

— Karl Erjavec

Ministry of Defence,
Government of Slovenia

APRISA XE PROVIDES HIGH CAPACITY NETWORK FOR VIDEO OVER IP SURVEILLANCE CAMERAS IN THE KARST REGION OF SLOVENIA

APPLICATION

Slovenia ranks as the third most forested country in Europe, with woodland covering approximately half the territory. An extremely important socioeconomic resource, the forests provide raw materials for indigenous industry and recreational areas for the public. However, fires are a continual hazard, and are particularly common in the Karst region of the country. While fires can never be completely eliminated, the damage caused can be dramatically reduced through early detection and response. The Government of Slovenia wanted to implement a secure, high capacity network with high definition video over IP surveillance cameras monitoring the woodland.

ABOUT THE MINISTRY OF DEFENCE OF THE GOVERNMENT OF SLOVENIA

The Ministry of Defence of the Government of Slovenia carries out administrative and professional tasks related to the national defence plan; development, organisation, equipment, functioning, and command and control of the Slovenian Armed Forces; preparation of civil defence; administrative communications and cryptographic protection within the defence system; military schools; organisation, preparation and implementation of the system for civil protection and disaster relief, and rights and duties of citizens with respect to defence, civil protection and disaster relief.

DEPLOYMENT REQUIREMENTS

There were a number of challenges that needed to be addressed for the Government of Slovenia's early warning fire watch system. These included:
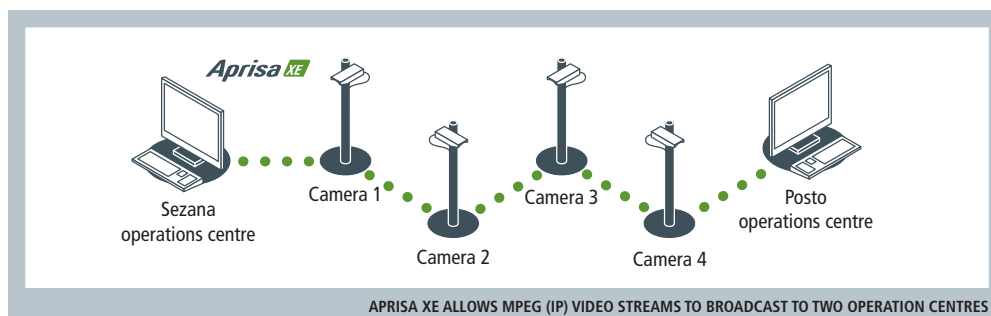
- Successfully covering the vast and remote areas of forest
- Incorporating a backup mechanism, with each high definition video over IP surveillance camera able to be viewed from two monitoring centres
- Delivering carrier-class availability standards (99.999%) to meet the real-time mission-critical nature of the application

WHY 4RF?

The Government of Slovenia considered a number of technical options before realising that 4RF was the only company able to successfully meet the challenging deployment requirements of their fire watch system. Distance and terrain characteristics meant that a fibre network was impossible. The need for symmetrical two-way transport, up to 50 Mbit/s Ethernet capacity, rendered satellite unfeasible and security requirements ruled out unlicensed wireless systems. Higher frequency licensed bands were also considered, but more repeater sites would have been needed between surveillance camera locations owing to the shorter distances achievable, and so this was not a viable economic option. The Aprisa XE, with its use of the sub-3 GHz licensed bands, was selected as the perfect product to meet the deployment distances, near non-line-of-sight link characteristics and high capacity required, in a cost-effective manner.

NETWORK DEPLOYMENT

The Aprisa XE point-to-point radio in the 2 GHz band was deployed throughout the coverage area in the Slovenian forest, by 4RF's certified partner, IT100. At each monitoring station, a high definition Video over IP camera system was connected directly to the Aprisa XE's integrated Ethernet switch. This further simplifies the network by minimizing the number of 'boxes' that need to be managed and maintained.

APRISA XE ALLOWS MPEG (IP) VIDEO STREAMS TO BROADCAST TO TWO OPERATION CENTRES

RESULTS

The Government of Slovenia's fire watch network has been active for more than a year, with a thousand square kilometre area in the Karst region now being protected. Links capable of transporting 50 Mbit/s of high quality video extend over distances up to 40 km. Network extensions to cover more forest areas are being planned.

4RF's Aprisa XE provided the ideal solution for the Government of Slovenia

INTERFACES USED
- Ethernet

TRAFFIC SUPPORTED
- Video over IP

ABOUT 4RF

Operating in more than 130 countries, 4RF solutions are deployed by international aid organisations, public safety, military and security organisations, transport and utilities companies oil and gas companies, broadcasters, enterprises, and telecommunications operators.

All 4RF products are optimised for performance in harsh climates and difficult terrain, and support legacy analogue, serial data, PDH and IP applications.

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