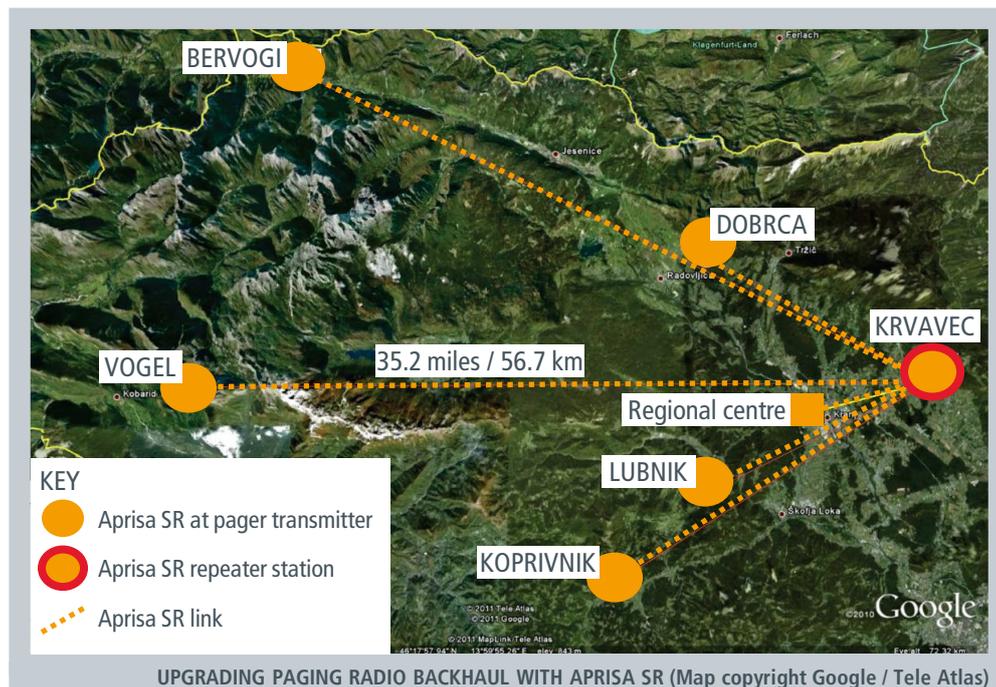# Aprisa SR provides secure, robust point-to-multipoint communications for Ministry of Defense first responder paging network

MINISTRY OF DEFENSE
REPUBLIC OF SLOVENIA

The Ministry of Defense of the Republic of Slovenia (MORS) operates a nationwide pager system for emergency 112 / 911 calls, with 13 regional centres throughout the country. 4RF and its local partner IT-100 are replacing the pager backhauling network in the Gorenjska region of Slovenia, a highly developed alpine region located in the north west of the country. 59 radios were deployed over a three month period, and a further 19 are currently being deployed.

"
The Aprisa SR is perfect for long distance UHF links in mountainous areas. It is simple to install and programme, and provides good security and high robustness.
"

Joze Stuflek

Managing Director, IT-100

UPGRADING PAGING RADIO BACKHAUL WITH APRISA SR (Map copyright Google / Tele Atlas)

KEY
- Aprisa SR at pager transmitter
- Aprisa SR repeater station
- Aprisa SR link

BERVOGI
DOBRCA
KRVAVEC
VOGEL
35.2 miles / 56.7 km
Regional centre
LUBNIK
KOPRIVNIK

APPLICATION AND DEPLOYMENT REQUIREMENTS

The legacy analogue system used to backhaul the POCSAG paging traffic was very slow and did not provide even a basic level of encryption. In addition to improving the speed and security of the network, the chosen solution needed to be installed easily, without the need for repeat visits, since many of the paging transmitter stations are located in remote areas with altitudes of up to 2000 metres. It also needed to be sufficiently robust to cope with the challenging environmental conditions, with temperatures often reaching well below freezing.

IT-100 and MORS chose the Aprisa SR from 4RF because of IT-100's previous experience with the Aprisa XE point-to-point microwave radio, with its high reliability, easy install and simple network management.

POCSAG: Post Office Code Standardisation Advisory Group: asynchronous protocol for paging data transmission

About MORS

The Ministry of Defense of the Republic of Slovenia, formed in 1990, is part of the Government of Slovenia and is responsible for the country's defense against external threats and natural disasters.

NETWORK DEPLOYMENT

IT-100 commenced deployment activities in December 2010, using the Aprisa SR in the 400 MHz UHF licensed frequency band. Over the three month period to the end of March 2011 a total of 59 Aprisa SR radios were deployed. There were very few direct links, with the majority of the links carried over repeaters owing to the mountainous terrain. The Aprisa SR repeater stations use omni-directional antennas to communicate with both their associated base station and their network of remote stations. The radios were easily configured to use the same channels as the analogue system being replaced. The links vary in length throughout the point-to-multipoint network, with a link from Krvavec to Vogal covering a distance of 35.2 miles or 56.7 kilometres.

USE OF REPEATERS IN THE MINISTRY OF DEFENSE APRISA SR NETWORK

Gorenjska region of Slovenia
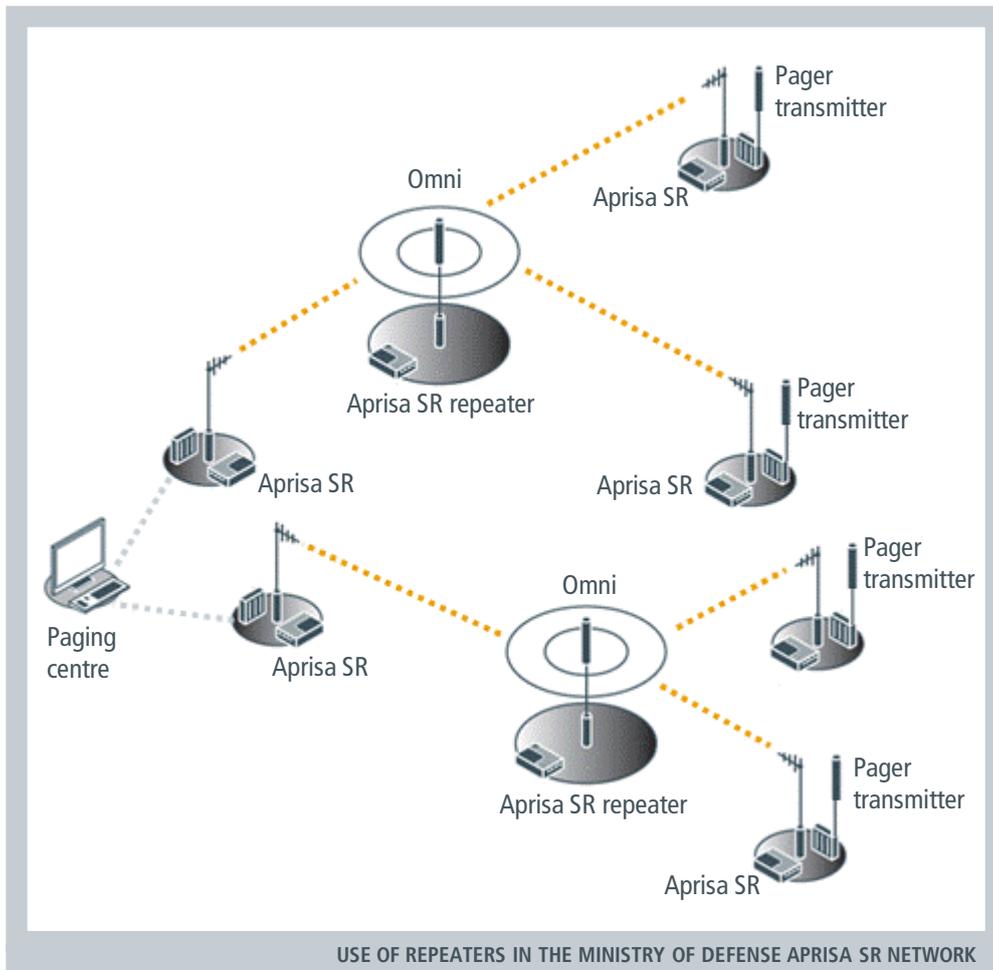
RESULTS

All the radios were deployed by IT-100 without any need for support from 4RF. The network was simple to install and provides MORS with the level of robustness needed for their mission-critical emergency call paging network despite the challenges presented by the mountainous terrain and remote location of the paging stations. IT-100 is now expanding the MORS network to include a total of 78 Aprisa SR radios: 14 base stations, 16 repeaters and 48 remote stations.

About IT-100

IT-100 was established in 1989 and specialises in the provision of private mobile radio systems, both analogue and digital, together with microwave radio links. IT-100 provides complete turn key projects and systems integration, with its comprehensive range of services including consultancy, design, planning, installation and support. IT-100 is located close to Slovenia's capital city, Ljubljana. More information is available on the company's web site at www.it-100.si.

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