Over-water broadband and telephony connectivity to remote tropical islands, powered by 4RF

With the Republic of Fiji's heavy reliance on the tourism industry, the provision of ubiquitous broadband is now a business necessity. Tourism operators need broadband access to promote and manage their resorts located on Fiji's many small remote islands, and demand is ever-increasing from both tourists, local communities and schools. When Telecom Fiji needed to seamlessly upgrade its multi-island communications network to include high-speed Internet access, its options were limited by the complexities of distance, over-water connections and challenging environmental conditions. Telecom Fiji chose 4RF Aprisa point-to-point microwave radio links to cost-effectively and reliably rise to the deployment challenge.

TELECOM FIJI DEPLOYS APRISA TO UPGRADE MULTI-ISLAND COMMUNICATIONS NETWORK

APPLICATION

Much of Telecom Fiji's equipment was out-of-date and unserviceable, with end-users frustrated by unreliable, slow dial-up access speeds as low as 14 – 28 kbit/s. The operator wanted to modernise its network to deliver improved communications, including the introduction of high-speed Internet services. Some particular objectives included:

- Achieving high-speed broadband access speeds of up to 256 kbit/s
- Providing Internet, voice and data access to more than 37 island resorts
- Supporting VLAN capability for the resorts to communicate with their mainland offices

DEPLOYMENT REQUIREMENTS

Telecom Fiji had some specific technical requirements that needed to be accommodated in the new network, as well as some challenges that the chosen solution needed to overcome. The new network needed to integrate with the existing transmission network, interfacing to legacy 2-wire PSTN exchanges, operating seamlessly with existing PABX systems and providing a data connection to the ISP node in Suva, Fiji's capital city. Additional challenges were presented by the topology of the group of islands Telecom Fiji needed to connect. Some of the resort islands were as far as 75 kilometres from the mainland, with the problems of reflected interference of over-water links, without significant elevation for line-of-sight communication. Additionally, the atmospheric conditions were variable and demanding, further complicating the network deployment.

Telecom Fiji
Republic of the Fiji Islands, South Pacific

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We could see that the provision of reliable Internet and data access would be pivotal to supporting our locally-based tourism infrastructure. We're really pleased with the feedback from our customers. The resorts have reliability, which is vital, and speeds well above that achieved with dial-up connections. The Aprisa microwave radio has proved a cost-effective, reliable solution.

— Chandra P Anuj "

Manager Engineering Design,
Telecom Fiji Limited

ABOUT TELECOM FIJI

Telecom Fiji Limited (TFL) is the sole provider of local and national (trunk) telephony services, and owns the only public switched telephone network in Fiji. The TFL network consists of 55 telephone exchanges throughout Fiji and Rotuma, connecting more than 101,000 customers.

WHY 4RF?

Telecom Fiji selected 4RF for a number of reasons:

- 4RF's superior track record in achieving long-distance challenging links
- The flexibility of the Aprisa radio, supporting a wide range of traffic and applications in a single platform
- The completeness of 4RF's offering, including development of a business case, network design, radio link planning, equipment installation and commissioning, and product training and support

NETWORK DEPLOYMENT

4RF began Telecom Fiji's deployment with an audit of the environmental and technical considerations, together with an evaluation of the desired performance characteristics. The comprehensive commercial and technical business case showed Telecom Fiji how the Aprisa would integrate into its existing network and deliver connectivity, performance and cost advantages over alternative access technologies. 4RF then implemented a pilot link to demonstrate the Aprisa's performance, followed by the network design and radio path engineering for the complete network.

The Aprisa network delivered Telecom Fiji and its customers with high-speed, reliable connectivity every minute of every day, despite the deployment challenges. The Aprisa's optimised architecture supports specifically configured connections: every radio provides fractional E1 and Ethernet interfaces connecting directly into Telecom Fiji's network on the mainland, and to the customer premises equipment at the resorts.

As well as the network planning and design, 4RF also provided product installation, commissioning and training and support for Telecom Fiji staff.

RESULTS

The Aprisa network provided Telecom Fiji's resorts with between 6 and 24 toll-quality voice circuits and high-speed Internet access at speeds of up to 256 kbit/s. Telecom Fiji's expanded and modernised network generated a new revenue stream in the form of a branded Internet service, Island Link. The return on investment time for Telecom Fiji's network was approximately two years.

APRISA NETWORK PROVIDES BETTER COMMUNICATION FOR REMOTE ISLAND RESORTS
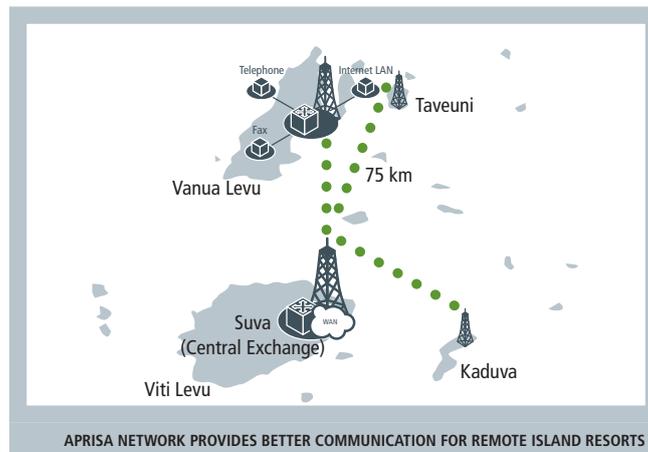
Telecom Fiji's customers have benefited from the new network in a number of ways:

- Reliable, trustworthy access
- Connectivity for online reservations, procurement and access to mainland based servers, EFT-POS and POS transactions
- New revenue opportunities
- Access to email and Internet, along with better voice and data communications for resort guests

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4RF's Aprisa provided the ideal solution for Telecom Fiji

INTERFACES USED

- E1
- 10Base-T Ethernet

TRAFFIC SUPPORTED

- Telephone / fax
- VoIP, VLAN, VPN
- Video

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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