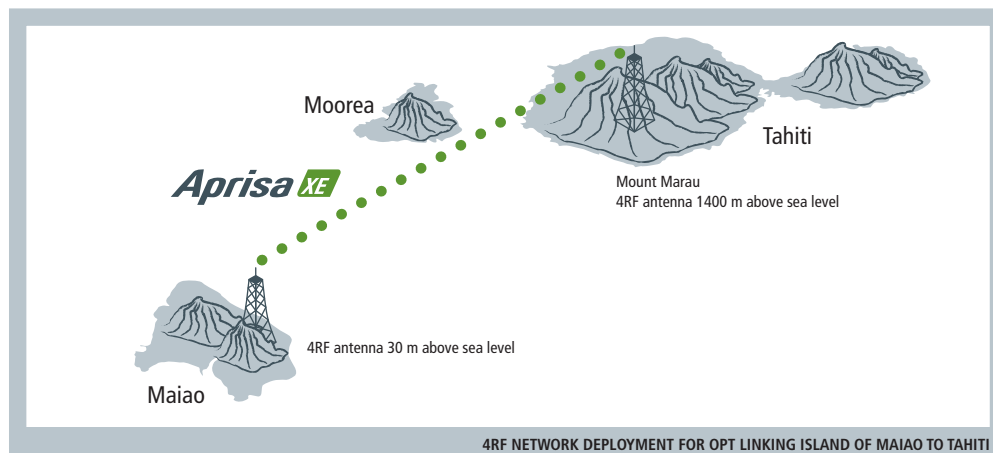


Case study

Aprisa XE cost-effectively extends telecoms and mobile coverage to remote French Polynesian island

When French Polynesian telecommunications operator OPT faced the challenge of extending coverage to the tiny, remote island of Maiao, they chose 4RF to deploy a radio link from the neighbouring island of Tahiti, 116 km away. The Aprisa XE delivered a consistently reliable link for telephony and GSM traffic, despite the problems presented by long distance, over-water transmission and conditions of high humidity. It also provided OPT with a highly cost-effective solution, essential for the limited subscriber base of the small population of Maiao.

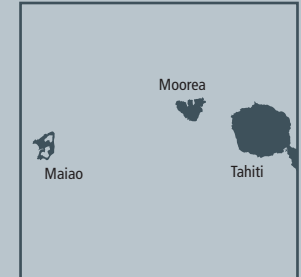


APPLICATION

The island of Maiao, 116 km west of Tahiti in the Îles du Vent group of islands, covers only 8.8 square kilometres, including a great deal of water and mountainous terrain. In the 2007 census, Maiao's population numbered 299. With a tiny population and clearly limited potential subscriber base, Maiao was not the most obvious choice of destination for a telecommunications operator to roll out services, but OPT was determined to do just this. The operator wanted a highly cost-effective solution that could support up to 50 POTS lines as well as backhauling traffic from the island's GSM base station. Enter 4RF...

OPT

MAIAO, FRENCH POLYNESIA



“ We are very happy with the Aprisa equipment, owing to its high reliability in difficult radio propagation conditions, and its ease of deployment in remote islands. ”

— Jean-Christophe CANOT

Pôle Services Réseaux de Télécommunications, OPT

ABOUT OPT

Office des Postes et Télécommunications, (OPT) is French Polynesia's national communications provider. As well as fixed telephony services, OPT provides GSM services through the 'Vini' brand of its subsidiary, Tikiphone.

OPT's potential subscriber base is distributed across many remote islands with steep, jagged terrain, in an environment of high humidity. However, cellphone coverage is vital for the development of the French Polynesian region's economy and tourist industry, as well as for maritime safety, and OPT plans to continue expanding its coverage, with the help of 4RF.



Aprisa XE

4RF's Aprisa XE provided the ideal solution for OPT

INTERFACES USED

- E1

TRAFFIC SUPPORTED

- POTS
- GSM

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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DEPLOYMENT REQUIREMENTS

Providing the inhabitants of Maiao with connectivity presented OPT with many technical and commercial challenges:

- Could high quality, reliable connectivity be guaranteed despite the remoteness of the island ?
- Would the solution be sufficiently cost-effective to make a sustainable business case for providing services to the island ?
- Given its remote location, could installation, management and maintenance be straightforward ?

With the Aprisa XE, the answer to each of these questions was simple: yes.

WHY 4RF?

OPT has found that the Aprisa XE is quite simply the only product that combines cost-effectiveness with the required level of reliability when faced with difficult radio propagation conditions, such as the long distance over-water link needed in this deployment. With the Aprisa XE, OPT can affordably expand its network even to the smallest communities in remote locations. OPT has been using point-to-point links from 4RF for more than five years, and 4RF is a preferred supplier to the operator.



4RF ANTENNA, MAIAO

NETWORK DEPLOYMENT

A three metre antenna was selected for each end of the connection, to increase the overall system gain for the long distance link. At the Tahiti end of the link, the antenna was installed 20 metres above ground level on the tower on Mount Marau, for a total height of more than 1400 metres above sea level.

At the other end of the link, 116 km away on the island of Maiao, the antenna was installed seven metres above ground level, for a total link height of 30 metres above sea level. The Aprisa XE in the 1400 MHz band was deployed, with a 3.5 MHz channel size and QPSK modulation. QJET interface cards were used at each end of the link.

RESULTS

The link between Tahiti and Maiao achieved a total throughput of 5720 kbit/s, more than enough to support 50 POTS subscribers and to backhaul traffic from the GSM base station backhaul. There is sufficient capacity to expand the range of services offered as subscriber numbers and demands continue to grow.

The link has been operational for a number of months, achieving a good signal strength and availability in excess of 99.99%.