



SAF Australia is the official national representative of the European microwave radio manufacturer SAF Tehnika. Based in Salamander Bay, NSW and Brisbane, QLD, **SAF Australia** together with our regional distributors supply SAF microwave radios systems as well as a full package of services to customers across the country. SAF microwave radios provide wireless data and voice transmission solutions to major fixed and mobile operators, ISPs, councils, utilities companies, schools/universities and many other customers in nearly 100 countries worldwide, including Australia.

Microwave Radio Network for Port Stephens Council, NSW, Australia

THE CUSTOMER

Port Stephens Council (PSC) is located at the boundary of the mid north and central coasts of New South Wales, Australia (Latitude South: 32'43', Longitude East: 152'9'), and covers an area of 979sq km. It is bound by the Pacific Ocean to the east and is characterised by pristine waterways, spectacular scenery, unspoilt national parks and abundant wildlife making the area a major tourist destination. Port Stephens Council provides Local Government services to the population of over 65,000 people.

DRIVERS

Previously Port Stephens Council used an ADSL Wide Area Network (WAN) to connect sites. Remote sites relied on the WAN operating at around 1Mbps to provide office productivity applications (mostly) via Citrix. The ADSL technology had become too slow to deliver adequate application performance and the Council's business processes were being adversely impacted. PSC analysed a number of options to provide the required bandwidth and concluded that a microwave WAN would deliver the best value and performance proposition.



SAF systems provide backhaul and last mile for Port Stephens Council in NSW, Australia

CHALLENGES

Port Stephens Council's main requirements were:

- High levels of reliability (better than 99.999% on main links)
- Minimum data speeds of 10-20Mbps at each site
- A cost effective solution
- Ability to support VoIP services
- Flexibility to add/change sites in the future
- A visually unobtrusive solution for many sites, such as Holiday Parks

SOLUTION

Based upon the requirements SAF's solution was:

- A high speed back-bone utilising licensed frequencies to guarantee high levels of availability and meet capacity requirements
- Use of cost-effective, class-licensed 5GHz equipment providing up to 70 Mbps throughput for last mile links
- An integrated Network Management System to allow monitoring of the network in real time
- Upgradeable equipment with VoIP support
- Use of existing towers and buildings to reduce costs and implementation time



CFIP-108 FODU (IP/TDM) 108Mbps



CFQ (TDM/IP) 155Mbps



CFM FODU 34Mbps



CFOL FODU 70Mbps

WHY SAF

SAF was chosen for the following reasons:

- The breadth of SAF's product range across both licensed and class-licensed equipment meant all equipment could be sourced from one manufacturer
- All equipment could be integrated into a single SAF Network Management System to allow operators to see at a glance the end-end performance of the network
- Local presence, ability to install, commission and maintain the network as well as to provide immediate local support and back-up
- Track record in delivering successful customer solutions both in Australia and internationally
- The reputation and reliability of SAF equipment
- Four year equipment warranty
- The cost effectiveness of the full solution against other options

EQUIPMENT DEPLOYED IN THE NETWORK

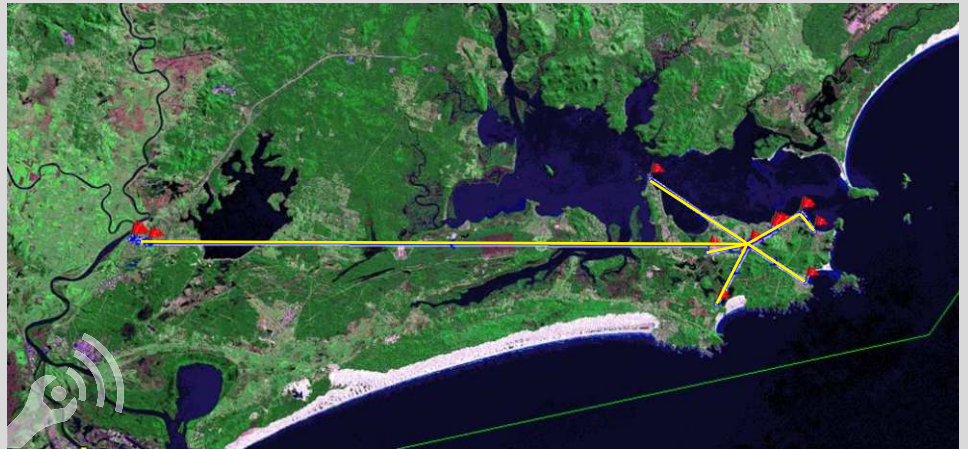
SAF CFOL	1-70Mbps 5GHz FODU solution with integrated 23 dBi Antennas	12 Links
SAF CFOL	1-70Mbps 5GHz FODU solution with 27dBi Solid Parabolic Antennas	1 Link
SAF CFM	34 Mbps 23 GHz FODU solution with 30cm Antennas	2 Links
SAF CFQ	8-155Mbps 11 GHz IDU +ODU solution 1+1 Space Diversity with 4 x 120cm Antennas	1 Link
SAF CFIP	4-108Mbps 23 GHz FODU solution with 30cm Antennas	1 Link



LINKS

The longest link between Nelson Bay and Raymond Terrace is over 35kms. To ensure high levels of availability this link utilises two 1.20metre diameter antennas and Outdoor Units (radios) at each end, each separated by more than 10 vertical metres to provide space diversity and redundancy.

Other links varied from a few hundred metres up to 7kms. Frequencies were selected to meet availability requirements but minimise ongoing ACMA license fees.



Port Stephens Council network topology



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