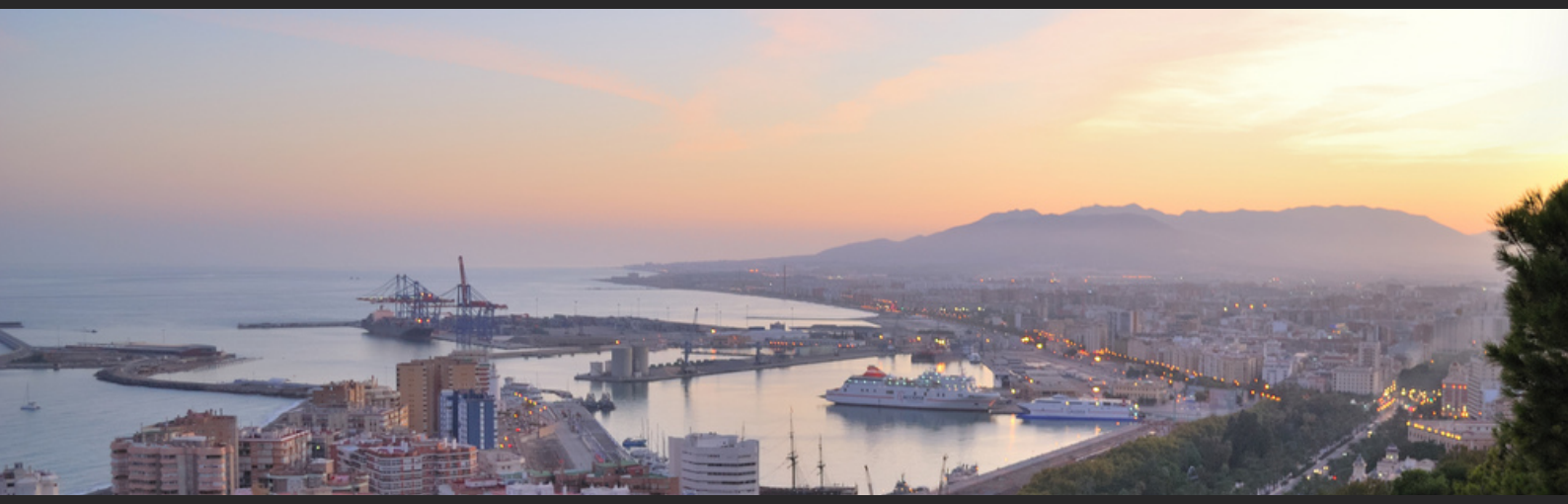


Case Study

Rebeloak SL, Spain

CFIP LUMINA BACKBONE

Customer Location,
Cómpeta, Spain

Customer

Founded in 2005, Rebeloak SL (bb4s.com) is a WISP (Wireless Internet Service Provider) offering VoIP and Internet services to more than 3000 business and domestic clients in the East of Malaga, Spain.

Challenge

ISP backhaul bandwidth requirements are expanding every 12 months and the existing backhaul solution would reach its maximum capacity in the nearest future. bb4s understands that success depends on the speed, price, and quality ratio of internet capacity.

The main challenge was to find a cost-effective solution delivering Gbps connectivity along with over 99.99% availability, QoS for VoIP and video services, the same as immunity from radio interference (F.O. solution), because a repeater point and fiber provider (data centre) are locations with a very aggressive radio electric environment due to the abundance of radio links.

The nearest neutral fiber access point was 50 km away. In addition, very high summer temperatures and sometimes quite heavy winter rainfalls are common in southern Spain.

Solution

A research identified an existing commercial radio site in the middle of the path, offering a possibility to complete a microwave backhaul solution in two hops. Mast space was reasonably priced, but collocation in the equipment room was the very best.

bb4s sought the assistance of "Artsys", and it was decided to purchase dual polarity links in the 18GHz licensed band, offering good availability and wide (56MHz) bandwidth. The client had no previous experience with SAF products, but received good references from other Spanish WISP

companies. The SAF solution, including fiber optic connectivity for GE, was chosen as the most appropriate one.

By utilizing both horizontal and vertical polarizations, two independent links were installed on each antenna, saving costs on mast space, also doubling the available capacity, and safeguarding against the possibility of a single link/equipment failure.

SAF 18GHz CFIP products were specified with fiber interfaces. The full outdoor solution reduced the footprint in the equipment room and realized a subsequent saving in collocation costs.

The solution has now been in operation for 14 months with 100% availability. Both bb4s and their end customers are delighted with the increased bandwidth, reduced latency, and better availability as

Details of the Network

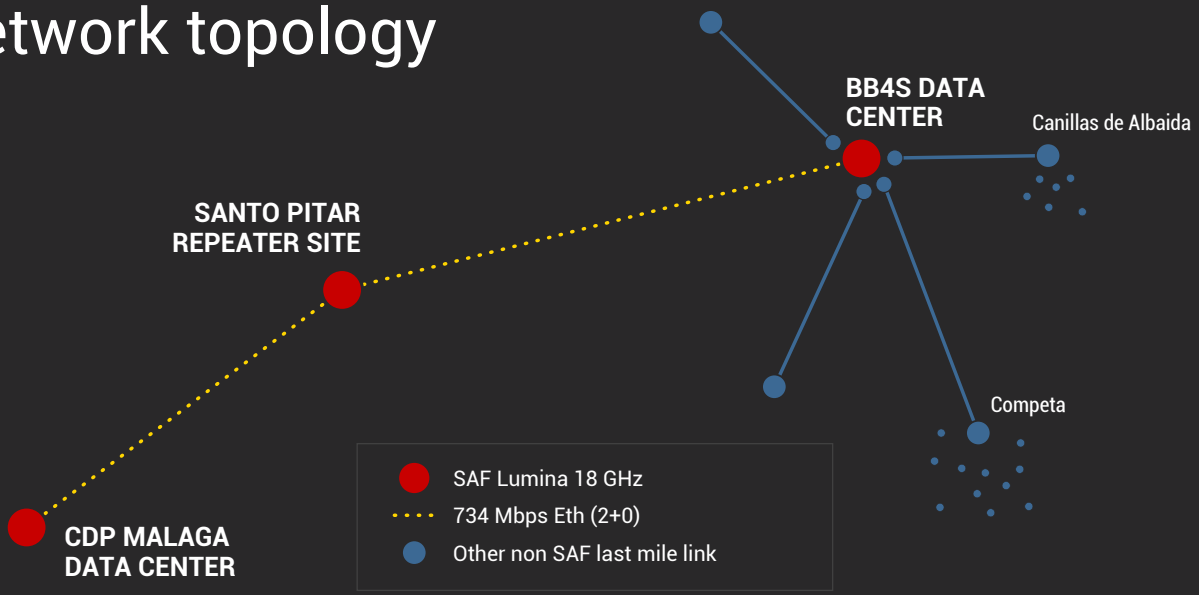
Equipment	CFIP Lumina FODU 18GHz, 360Mbps, 2xGE ODC OPT Single Mode. 2 Links (2+0 solution)
Link distance	First link – 20.23 km, second link – 26.15 km (the nearest neutral fiber access point was 50 km away)
Frequency	18 GHz
Services	Ethernet
Antennas	Arkivator 18GHz, 120 cm, C18A1202 with a coupler 18GHz OMT (orthomode transducer)

- The main backbones are comprised of two dual polarity links in the 18GHz licensed band, offering good availability and wide (56MHz) bandwidth.
- By utilizing both horizontal and vertical polarizations, two independent radios could be installed on each antenna, saving the cost of mast space while doubling the available capacity and safeguarding against the possibility of a single link/equipment failure.
- SAF 18GHz CFIP products were specified with fiber interfaces.
- The full outdoor solution reduced the footprint in the equipment room and realized a significant saving in collocation costs.

"I am so glad we decided to build our backhaul system by using the SAF equipment. The support and advice from their local reseller "Artsys" has been excellent! We have reduced our costs, multiplied our bandwidth up to 20 times, and greatly improved the quality, availability, and resilience of Internet and VoIP telephone services we deliver to our end customers."

Nick Kett
Technical Director, Rebeloak SL

Network topology



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