



Case study

Aprisa XE enables mission-critical solution with maximum spectral efficiency and long-term expansion capability

When faced with spectrum congestion and interference in its mission-critical real-time monitoring and control communications, Meralco migrated to the 4RF Aprisa XE platform to provide a robust transmission solution. As well as solving the congestion issues, Meralco's new network reduced spectrum licensing costs and provided a future-proof solution to expand the network and incorporate additional types of traffic as Meralco's needs evolve.

APPLICATION

Meralco's DAS (Distribution Automation System) is a computer system used to manage the company's entire electrical distribution system. The company needed to efficiently carry traffic to and from its sub-stations, including real-time voice and data for its SCADA (supervisory control and data acquisition) system, monitoring sub-station switching, voltages and operational status. As part of the company's ongoing distribution automation program, Meralco also wanted to be able to use its new network for communication between its various business units.

DEPLOYMENT REQUIREMENTS

Meralco's network presented a number of technical and business requirements that their chosen solution needed to meet. These included:

- The need to move away from the existing 2.4 GHz spectrum band, which was congested and unreliable, and select a new band which would be suitable over the long-term and provide sufficient capacity for expansion
- Support for mission-critical traffic for real-time monitoring and control
- Managing the many links converging at hub sites, requiring a large amount of costly spectrum
- Integration with Meralco's existing information technology systems both today and as the company increases the scope of its network

WHY 4RF?

After considering a number of technical solutions from a variety of suppliers, Meralco selected the 4RF Aprisa XE platform. One key reason was the excellent relationship that 4RF has with customers, and how its technology experts took the time to explore and understand Meralco's issues.

4RF then designed and implemented a wireless solution that not only meets the company's requirements now, but also provides sufficient capacity and flexibility to support the network as it evolves. Additionally, 4RF's products were fully technically compliant with all relevant standards, integrated easily with Meralco's existing systems, and were extremely price-competitive.

Meralco

PHILIPPINES



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The Aprisa XE radio system is a versatile wireless solution to complement our existing SDH fiber optic network in providing mixed voice and data services to our power substations. Its integrated Ethernet interface enables us to extend IP services far beyond the reach of our fiber optic network for efficient electric service delivery in a highly competitive market and deregulated environment.

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— Eliasito M Parungao, Jr.

Assistant Vice President and Head of Communications, MERALCO


MERALCO

ABOUT MERALCO

Meralco is the Philippines' largest electricity company, with a legacy of over 100 years.

With 30 branch offices, Meralco serves 23 cities and 88 municipalities with a population of over 19 million in nearly 10,000 square km.

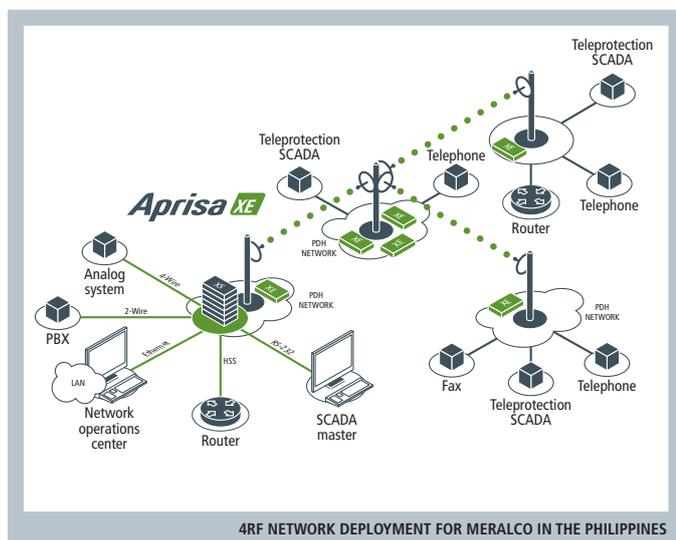
As part of Meralco's commitment to customer service, the company continues to invest in high quality information technology and communications solutions.

The Aprisa XE's high levels of spectrum efficiency and advanced modulation techniques mean that the network has been able to easily cope with Meralco's high data capacity requirements. As well as providing capacity for the future, this has resulted in reduced spectrum licensing costs.

Easily managed and configured from a single point, owing to 4RF's SNMP-based network management system, the wireless network supports multiple interfaces and interacts with a number of Meralco's existing systems. These include electrical transmission teleprotection equipment, the internal voice system, the internal LAN/MAN/WAN networks and the building security and facilities management monitoring system.

NETWORK DEPLOYMENT

Meralco's network consists of more than 60 point-to-point links and centralised expansion shelves. 4RF's Aprisa XE Digital Radio Transport and Access platform, operating in the licensed 1.4 GHz spectrum band, provides the radio transport. The network uses centrally located Aprisa XS expansion shelves as a simple to operate multiplexing platform, combining radio transmission and multiplexing under a common management system. The SuperVisor software used in both the Aprisa XE and XS ensures that field staff have a common tool for configuring the system and diagnosing faults. The use of common SNMP MIB's simplifies integration with the Meralco SNMP-based network management platform.



digitised traffic in the E1 bearers, as well as the demultiplexing of the basic services back onto the common interface cards. The basic services remain in a digitised state across the network, ensuring signal quality is maintained across the entire network, particularly in the case of analogue 2- and 4-Wire services where quantization distortion can affect the quality of the signal.

The network has been designed to expand as Meralco's network grows, supporting services including, IP, E1, high speed synchronous and low speed asynchronous data and analogue voice traffic and includes redundant radio protection and redundant protection for every remote interface, minimising single points of failure.

RESULTS

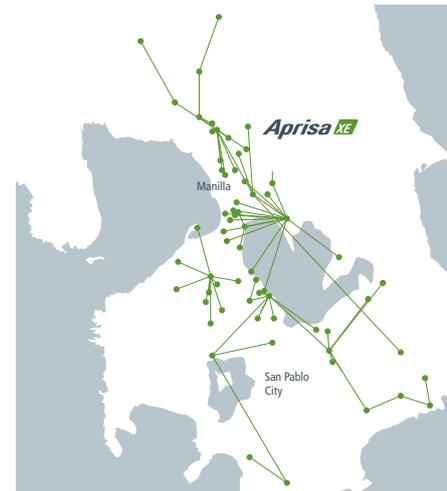
Meralco has seen the benefits of using 4RF's point-to-point wireless products immediately, including:

- Spectrally efficient modulation resulting in higher link capacities and reduced licensing costs
- Reduced network management overhead through SNMP single point of management
- Improved performance through the network's robustness, reliability and efficiency
- Simplified sparring through the use of common hardware
- Excellent return on investment, including the network's suitability for IP traffic in the future as the network expands

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Aprisa XE



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

INTERFACES USED

- V.24
- HSS
- FXO/FXS
- 4W E&M
- Ethernet
- E1

TRAFFIC SUPPORTED

- Voice
- SCADA
- IP traffic

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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