



ROSMORPORT



Objectives

- To provide wireless broadband network to both mobile and fixed location subscribers;
- To improve the network efficiency of the existing WipLL technology;
- The consolidation of all government infrastructures around the Gulf of Finland region;
- To provide network users with high speed Internet and database access;
- To provide commercial communication services.

Challenges

- To provide Data, video and VoIP transmission services;
- 24x7 reliability;
- To design a system with the confidential transmissions.

Technological radio network in the Gulf of Finland

Rosmorport was founded in 2002, aiming to speed up the development of Russian sea transport infrastructure, providing safe navigation through navigable waters of Russian seaports and increasing the competitiveness of Russian seaports under its remit.



As one part of its ongoing investment to improve services to its clients and to increase the efficiency to its operations, Rosmorport has been investing in a programme of modernisation across its technology and communications infrastructure base; more recently, the territories covering the eastern part of the Gulf of Finland – an area which covers more than 10,000 m² of territorial land and waters, including the ports of St. Petersburg and the Leningrad region of Kronstadt, Ust-Luga, Vysotsk and Primorsk. – has been an area of focus for this programme.

The project aims to deliver a technology upgrade to communications services and overall operations efficiency to a number of Rosmorport's divisions including the Port Administration Authorities through to radio engineering posts, customs, marine operations - and even extending out onto seaborne vessels such as icebreakers, harbor pilot services and merchant ships operating in the Gulf of Finland.

The key challenge was to provide a system that delivered consistent levels of reliable and uninterrupted services for data, video and voice (VoIP) transmission across the entirety of the planned network – including to vessels at sea – whilst conforming to the stipulated Quality of Service (QoS) requirements.

•Solution

33 Base Station sectors, made up of InfiNet Wireless Mmxb/6.300.2x200.2x16 units;

200 units of InfiNet Wireless's

Smnc/6.300.2x200.2x19 and Smnc/6.300.2x200.2x24 equipment;

Smnc/6.300.2x200.16 with an integrated sector 90 ° antenna, and additionally 2 external MA-WD62-16B antennae;

A dedicated server hosting InfiMonitor, & an InfiMUX6G-H09 switch.

The most challenging part of a system was to provide a seamless and reliable wireless communications to moving vessels at the sea. Multiple extensive trials were conducted aboard two icebreaking vessels as well as the pilot boat verified the network's ability to providing lossless and high-capacity bandwidth in a variety of weather conditions: travelling at a minimum of 12 knots, the transmission speeds were measured between 4 Mbps and 42 Mbps for uninterrupted data, voice and video services, concluding that the system was completely viable for seaborne wireless broadband communications.

The network was commissioned and installed and now 33 base station zones, supporting 200 stationary subscriber stations, have already been installed at numerous seaport locations across the region. The system provides up to 50 Mb/s broadband wireless access capability to subscribers located – in some cases - over 20km from each base station. The network has also been extended to 16 icebreaking vessels, with plans in place to connect over 100 more vessels to the network in the near future.

Commenting on the success of the project, Igor Malygin, deputy head of Geyzer-Telecom's system integration and development department explained: *"This was both a very interesting and a very challenging project, and proved the immense capabilities and flexibility of InfiNet Wireless wireless broadband technology and expertise. Before the project could even start, a range of complex tests had to be undertaken to prove the viability of the technical design solution proposed by InfiNet Wireless. Having proven it in the field, the application of this technology to marine systems' radio networks has now given us the confidence to extend into more similar scale projects - both in Russia and beyond - with InfiNet Wireless proving it can tackle and solve the toughest of technical challenges."*