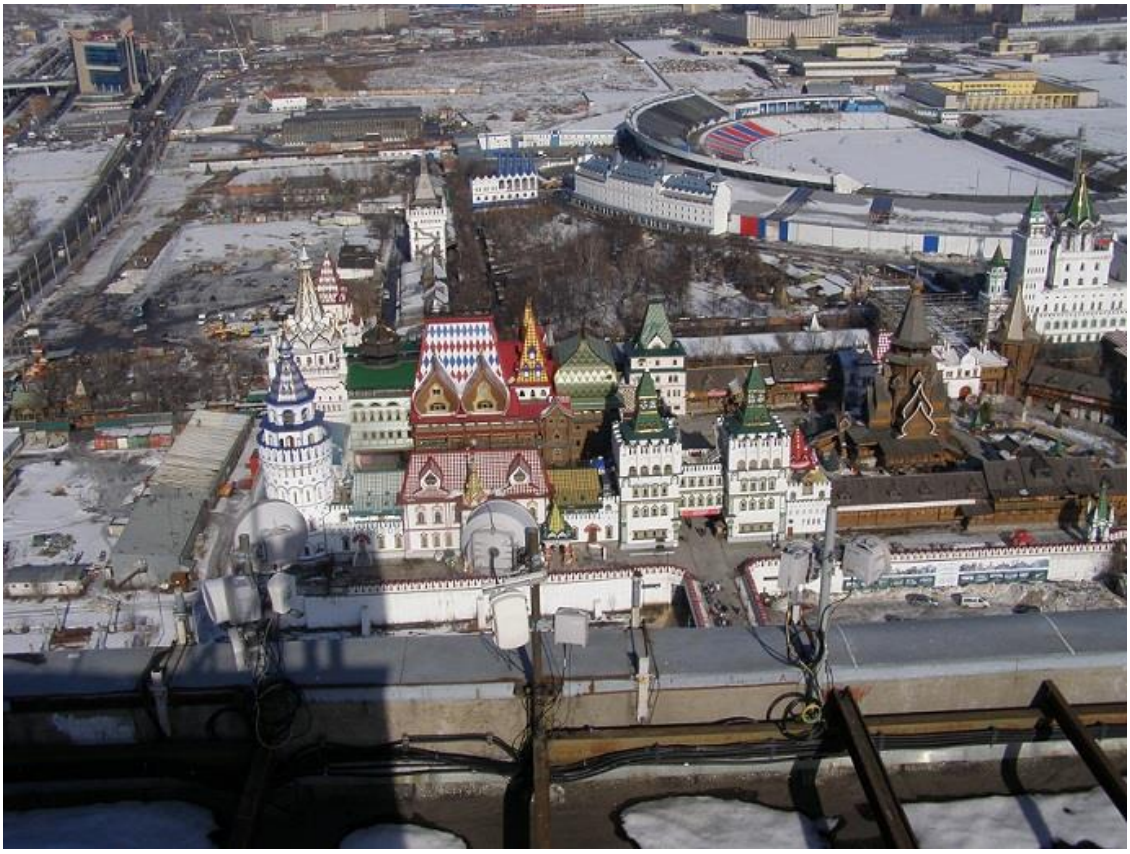
CASE STUDY

CUSTOMIZED NETWORKS FOR FIRE BRIGADES IN MOSCOW

HIGH QUALITY COVERAGE FOR THE ENTIRE MOSCOW REGION



CLIENT/COMPANY
Moscow Fire Brigades – Russia

MARKET SEGMENT
Fire Brigades/Police

TECHNOLOGY PROVIDER
Radio Activity srl
Milan – Italy

BACKGROUND

The history of the Russian Fire Department goes back to 1649, when the Order on City Departments was issued, which regulated the order of firefighting in Moscow. The historical value of the Order is concluded in the fact that it provided the basics of professional Fire Departments. In fact, the firefighting staff with salaries, as well as fire watch were established; the use of mechanical water pipes was provided and fire spotters had a right to punish the citizens for disobeying the fire safety rules.

After the fall of the Soviet Union in the beginning of the 1990s, the Ministry of the Internal was established. All competencies concerning the organizing, improvement of structure of units were passed to the regional branches of the Ministry of the Internal. In 2001 the State Firefighting Service of the Ministry of the Internal was reorganized into the State Firefighting Service of the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters.

"One of the key advantage provided by Radio Activity's equipment is its expandability and frequency effectiveness".

— Moscow Fire Brigades Team

PRODUCTS

- ✓ **53** Radio Activity DMR repeaters Tier II, mod. RA-450;
- ✓ **29** Radio Activity DMR repeaters Tier II, KAIROS-450

CHALLENGES

In the past, the city of Moscow used to install a repeater and voting system for each channel.

This solution, in a network composed of 13 analog channels, could not provide sufficient high quality coverage in an urban environment. Furthermore, the fact that the radio frequency equipment deployed in the past used separate antennas, was often the cause of bad interference.

SOLUTIONS

The simulcast system deployed by Radio Activity, in partnership with MPT-Service project, is composed of 3 huge networks to cover Moscow, with 10 base stations each. MPT-Services managed the installation of the system and provided combiners, power supply and all the necessary accessories to complete the system.

The city is divided into 10 administrative regions, covered by 7 smaller networks, with 2 base stations each and 3 smaller networks with 3 base stations each. Each base station includes equipment for 3 or 4 frequency channels for MPT- 1327 trunking system, plus 1-4 channels for simulcast. Simulcast networks and trunking networks use common combiners and antennas. The new simulcast equipment uses space diversity receivers and antennas. All receivers use mast mounting filters and low noise amplifiers.

The simulcast networks support both DMR mode and analog mode. The backbone infrastructure include E1 channels. The Ethernet network for simulcast equipment is provided by TDM multiplexors and part of the capacity of E1 channels is used for legacy trunking systems. In addition to the infrastructure installed on land, also a large tunnel was equipped.

RESULTS AND BENEFITS

This new simulcast system provides high quality coverage for the entire territory. It also enables expandable and easy-to-tune coverage in tunnels and buildings. The automatic tuning reduces the backbone delay and makes the use of administrative tools easy.

The fact that the devices support legacy terminals eased the incorporation of existing dispatching systems. The configuration of a simulcast network allows the use of analog and digital terminals in one infrastructure, at the same time. Furthermore, the migration process could be carried out on a region-by-region fashion, based on the customer need and availability.

Lastly, the customization of the frequency band in the 479-490 range, facilitated its introduction in one of the region's networks.