



# The Fire Department of Machala, Ecuador, extended its Communications to cover isolated areas of the Andes Mountains with Motorola Technology.



The Fire Department of Machala, Ecuador, decided to implement MOTOTRBO IP SITE CONNECT professional digital two-way radio system, to optimize their work procedures, coordinate logistic tasks and improve communication in rural areas or in locations of difficult access.

The objective of implementing the system was to update the analog technology with the MOTOTRBO IP SITE CONNECT digital solution to extend communication within multiple locations and allow improvement in data transmission for the whole fire department.

The Fire Department of Machala, Ecuador, located in the low lands of the Guayaquil Gulf, consisting of 14 cantons, needed an upgrade to perform the transition from their wireless analog devices to digital technology devices, and thus have greater communication possibilities and more services able to facilitate data transmission.

Previously, the Machala Fire Department had been working with an analog communication system with insufficient signal to cover the entire required area. This system only allowed communications in the lower area, and in natural disaster situations the higher area was left totally isolated and without communication. Today, with the digital radios, the firefighters have adequate coverage, and excellent voice quality, capability for radio-to-radio transmission and reception of text messages, private calls, and soon the implementation of a location and positioning system via GPS.

After a meeting with the members of Machala Fire Department, where all the benefits of the MOTOTRBO IP SITE CONNECT digital system were explained, the organization decided on making the necessary changes in the communications area. After the project go-ahead approval, the required coverage area was identified in order to look for the appropriate repeater points and the link points. Once those points were located, the next steps included acquiring the site and implementing the infrastructure (towers, booths and electricity installation).

The solution implementation required the following equipment:

- MOTOTRBO system:
- 4 DGR 6175 Repeaters
- 3 portable radios and 12 mobile radios
- Point-to-Point wireless broadband solutions:
- 4 PTP 200 bridges
- 2 PTP 500 bridges



## CUSTOMER PROFILE

### Customer

Machala Fire Department

### Location

Machala, Ecuador.

### Implemented Solution

MOTOTRBO digital radios (4 DGR6175 Repeaters, 3 portable radios and 12 mobile radios) and Point-to-Point Wireless Network Solutions (4 PTP 200 bridges and 2 PTP 500 bridges).

### Applications

Among the various benefits of Motorola radios, the most important is that of keeping clear and stable always-on communication throughout the entire Fire Department.

### Website

[cescom@cesconet.net](mailto:cescom@cesconet.net)

### Project integrator: Cescom

This is a company with 18 years experience in the field of telecommunications. They meet the radio communication needs of company owners and customers in general, offering high quality products and continuous professional advice with qualified personnel in electrical engineering. They serve the entire province of El Oro and the rest of the country in all matters related to telecommunications.



“We are extremely satisfied with the development of this implementation. Our communications are clearer, we are faster in responding to emergencies and more expedite in problem resolution. Before we had difficulties with the system in place, since we had to repeat the message two and even three times. Now our communication is extremely reliable from the very first time”, said Lieutenant Colonel (B) Ing. Leonardo Mejía, Head of the Machala Fire Department.

To perform the migration from analog to digital technology, we evaluated various proposals from suppliers of technological equipment. During the process, the Fire Department also evaluated systems from other manufacturers, but none of this equipment could adapt to the required needs. Finally they opted for the MOTOTRBO IP SITE CONNECT solution provided by Motorola, as its digital radio platform is currently the only system that meets international standards and can adapt to different users needs.

The equipment installation and configuration was a very simple process. While the equipment was being delivered, the firefighters from the different cantons were trained in the use of the new digital radios.

#### Applications and benefits

Among the various benefits of Motorola radios, the most important is to keep always-on communications between the different cantons and the entire Machala Fire Department. The radios are used to coordinate logistic tasks, to optimize and expedite communication with excellent audio quality and provide the stability needed to ensure proper operation of the equipment applications anywhere in the work area.

“There was great need in the region to increase operating capacity in communications and the project considered expanding the radio coverage over the entire province. These shortcomings prompted the implementation of a stable, clear and safe technology for the entire region.

We are extremely pleased to be able to help Machala Fire Department to have a more direct and fluent communication, especially in case of emergency in rural areas or in locations of difficult access”, said Rafael Fernández Feo, Business Development Manager at Motorola in Ecuador.

#### What is the MOTOTRBO IP SITE CONNECT digital system?

IP SITE CONNECT allows instant connection of up to 15 repeaters to create a reliable local area and also a wide network. In one of its coverage points, a user can share voice and data communication with another user in any of the other geographical locations, anywhere in the world. It can also create wide contiguous area communication by connecting adjacent coverage areas or eliminate the impact of physical barriers in one place.

#### What is the PTP 200 and PTP 500 Point-to-Point equipment?

Motorola’s 500 Series of wireless Ethernet Point-to-Point (PTP) bridges work in the 5.4 and 5.8 GHz unlicensed bands at throughput of up to 105 Mbps. Their design enables reliable data transmission and voice and video communication, among other applications. The 200 Series operates on the 4.9 GHz licensed band at throughput of up to 21 Mbps and is the ideal option for cities, towns and municipalities with limited budget.



[www.motorola.com/caribbean/wirelessnetworksolutions](http://www.motorola.com/caribbean/wirelessnetworksolutions)

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