

Communication Control for the Police in the Swiss Alps

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The Challenge

The Canton of Zug is one of the 26 cantons that make up the Swiss Confederation. Zug's area is relatively small, 293 square kilometers including a large 38.3 square kilometer lake, but it has very mountainous terrain. Altitudes range from 413 meters to over 1000 meters above sea level. The Zug police needed a radio system that would give trouble-free service to all the stations and patrol cars throughout the canton.

Motorola suggested a simulcast system to ensure efficient coverage throughout the difficult terrain. Three transmission sites were established, with a fourth, on a very high mountain, selected as the back-up site. That back-up site is linked by one fiberoptic link and it, in turn, communicates with the three remote sites by means of 10.7 GHz microwave equipment.

The system is composed of two ASTROTM digital encrypted simulcast channels and three analog simulcast channels. Dispatchers control the system through a CentraCom Series IITM and five Central Electronics Bank (CEB) console positions and maintain contact with approximately 110 portable or mobile units, used by police officers in the field.

Motorola's Solution

Since many important elements of the system were located on remote mountain tops that were usually inaccessible in winter, the Zug police needed a system to monitor these sites by receiving an alarm signal in case of intrusion or equipment failure and to be able to take corrective action in order to fix the system. Motorola's communication monitoring system was chosen because of its state-of-the-art technology, user-friendliness and reliable operation. The police also knew that this system was flexible enough to allow any last minute changes to the radio system.

The PC terminal in the central control room displays a graphic map of the entire Zug canton, with the location of all sites. Whenever an alarm is received from a site, the location is indicated on the screen by red flashes. The operator can then get a full report of the problem by clicking his mouse on the troubled indication. Because of its user-friendliness, CentraCom console dispatchers can easily operate the MOSCAD system without undergoing specialized training.

Benefits

The entire radio system is easily monitored and controlled from the console. Remote sites report on VSWR, RF power drop for each base station repeater, 230VAC power failure, battery charger failure, battery voltage drop, multiplexer failures, microwave failures and intrusions at any one of the remote sites. Operators are also able to control the system from their consoles. For instance, if a particular simulcast transmitter site fails, an operator can switch off all simulcast sites and switch on the back-up site by pressing a single button.

The Zug police are very satisfied with their system. They know it is reliable and will instantaneously report any fault so that a technician can be dispatched to make the repair even before the users realize that there is a problem.

The exacting Swiss appreciate motorola quality and reliability.