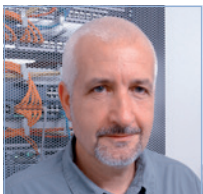




# Fast and reliable alerting in a separate network

Reference report on the alerting network in South Tyrol, Italy

The topography of the province of South Tyrol, situated in the South Tyrolean Alps with densely populated valleys and high Alpine peaks measuring up to 3,900 meters above sea level, presents a number of significant challenges for alerting systems, requiring a high-performance radio network architecture. In 2011 the regional association of voluntary fire brigades in South Tyrol (LFV) commissioned Swissphone with setting up a new alerting system – and for good reason. Walter Oberrauch, head of the techni-



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Walter Oberrauch, head of the technical systems division at LFV

cal systems division at the association: «Our goal was to send alerts separately from voice radio and transmit them at the same frequency across the entire province. This would allow us to alert people who are outside of their own district borders.»

## A network with redundant control and monitoring systems

The new network architecture in South Tyrol, which Swissphone installed in collaboration with Eltronix, the local service partner based out of Bruneck, Italy, includes two redundant control and monitoring systems. One is located at the provincial emergency call centre in Bolzano, while the other backup system is installed at the LFV facility. There are also nine additional PC-based transmitters at the district operations centres. Walter Oberrauch: «It was important that we be able to autonomously alert the individual districts, even if the connection to the control and monitoring system is disrupted.»

## Facts about the South Tyrol region

In South Tyrol, 306 voluntary fire brigades, three works fire brigades and one professional fire brigade in Bolzano are there to provide fast and reliable assistance in the event of fires and other emergencies. There are nine district associations as well as a regional association based in Vipiteno, which is also tasked with running the provincial fire academy.

The alerts are now reliably transmitted over a separate, highly stable and failsafe radio network with multiple fallback levels. Messages are sent via 68 base stations scattered across the province, which can be accessed by IP or radio. The chosen solution immediately demonstrated one clear benefit that it has to offer: When the first 58 installed stations were put into service, it became clear that improvements to radio coverage in certain regions would be necessary, as had already been expected. Walter Oberrauch: «We were then able to integrate ten additional stations into the network in these regions without a problem.»

## Passed the test in practice

When the digital alerting network was put out to tender, it was clear that volunteer firefighters would prefer a compact, handheld device to carry around with them. Walter Oberrauch: «They were also looking for long battery life and top-notch signal reception, both of which the POC-SAG pagers offer. For this reason we opted for the POC-SAG standard and still firmly believe we made the right choice.»

The alerting system has also proved highly reliable: Director and Academy President Christoph Oberhollenzer: «The alerting system was truly put to the test in the many times the fire brigade was forced to roll out during weather emergencies over the past few years – and it has proved more than up to the challenge.»

## 7,300 pagers for the POC-SAG network

The regional association conducted a market analysis in the preparation phase, classifying a number of pager models from different manufacturers – including Swissphone's DE915/DE935 series – as standard. The individual voluntary fire brigades purchased a total of 7,300 pagers during the phase when they transitioned to the new system. With the new devices users now receive convenient, easy-to-read alerts on their pager display.

The digital pagers operate in the reliable POC-SAG network. The alerts are generally transmitted in batches with high reliability. Walter Oberrauch: «We had experienced occasional malfunctions in the past. The situation has improved markedly with the new network. The members of the voluntary fire brigades are happy with the POC-SAG devices due to their compact, sturdy construction and like to carry them with them as well.»

## Fast alerting and clear communication

If several radio base stations cannot be reached in the event of a disruption to several feeder lines, the message is re-sent via radio link. Even if the entire feeder network goes down, central, province-wide alerts can be sent in a total of four transmissions. Tests confirm that each alert takes a mere ten seconds to signal. That's a great time in a region with a difficult topology like South Tyrol and demonstrates that the fallback levels work in emergency situations.

Separating the alerting system from voice radio also results in much improved communication during operational deployments. Full and complete logs of the alerts are maintained, which can be viewed using the queue manager or the individual program modules.

In a nutshell, the new alerting network meets all the requirements of the voluntary fire brigades, fire officials, technical systems managers and the people of South Tyrol as well. It delivers fast, reliable assistance in the event of a fire or rescue operation.

## Components of the Swissphone solution

### Hardware

- DE 915/ DE 935 pager

### Network

- Multimaster technology