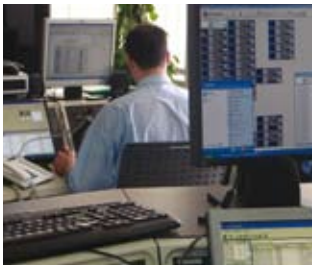# Portugal revolutionises internal security with TETRA network based on Motorola Dimetra

## Portugal

Situated on the west coast of Europe in the Iberian Peninsula, Portugal has a population of 10.5 million and comprises a total area of 92,090km$^2$ – including the autonomous regions of the Azores and Madeira archipelagos. On the Continent, it is divided into 18 districts, with districts and autonomous regions sub-divided into 308 Councils/Municipalities and 4,257 towns. The City of Lisbon, with a population of 550,000, is the capital of Portugal, providing the main economic hub with both the largest maritime port and airport. Large urban centres of the country are patrolled by the Public Security Police (PSP), while the Portuguese Guarda Nacional Republicana (GNR) is the gendarmerie responsible for enforcing the law in rural areas and smaller towns, providing a national highway patrol and fiscal guard. Other major public safety agencies include the National Institute for Medical Emergency (INEM), and National Services of Fire Brigade and Civil Protection (SNBPC).

### Enable seamless inter-agency radio communications between emergency services, public safety and civil protection agencies

Portugal's public safety agencies were operating bespoke radio networks. Many different systems had been established using an assortment of analogue technologies, making inter-agency communications difficult. Some agencies were using mobile phones, while others were operating disparate radio networks within the same district. Coverage was mainly centred around the cities, while maintenance issues were arising due to the age of the legacy equipment.

The Government of Portugal established the 'SIRESP' programme (Integrated System of Portugal's Emergency and Security Networks) to provide seamless inter-agency voice and data communications to more than 53,000 users in the police, fire and ambulance services. SIRESP called for the implementation of a digital two-way radio network with improved national coverage, increased security and voice quality, plus packet data capability. A further challenge was to adapt the business processes employed by more than 20 government agencies.

### Motorola Consortium and 'Dimetra' Tetra infrastructure selected for SIRESP turnkey project

Under a public/private partnership, SIRESP is being deployed for the Portuguese Ministry of Interior (MOI) on a 'build-own-operate' basis, by a consortium comprising Portugal Telecom, Esegur, SLN, Datacomp and Motorola. The consortium was awarded a 15-year contract, and established a new operator – 'Siresp SA' – to serve user agencies under service fee.

"The Motorola Consortium was selected on the basis that it presented the most interoperable, cost effective and secure choice," said Antonio Costa, Portugal's Minister of the Interior back in 2006. "For the first time, our security forces will be able to communicate seamlessly with other agencies. This represents a revolution for Portugal's internal security and we know that Motorola has a proven track record in similar projects."

**Company**
Portuguese Ministry of Interior

**Technology partner**
Portugal Telecom, Esegur, SLN, and Datacomp

**Service provider**
Siresp SA

**Industry name**
Emergency services, public safety and civil protection agencies

**Product**
- Dimetra infrastructure and services
- 550 base stations, 20 control rooms, nine remote nodes
- 4,000 x hand portables/radios
- National control centre

**Solution Features**
- Highly-flexible, scalable and standards-compliant Tetra system
- Voice, Short Data Services (SDS)
- High levels of coverage in both urban and rural areas
- Robust hand portables with advanced functionality

**Benefits**
- Seamless and proven inter-agency communications
- Economic and operational synergies realised
- Reliable and instant access to voice & data for diverse work groups
- Change management beyond technology and into business processes

**Tetra improves inter-agency collaboration and coverage**

SIRESP has proved a success with user agencies – including the emergency services, GNR, PSP, SNBPC, Policia Judiciaria, Secret Service, INEM and border control. Its ability to support seamless inter-agency communications has proved effective at major events – such as the Fatima religious festival, the annual cross-country horse race and the 'Rock in Rio' music festival – while network coverage is vastly improved in both city and rural areas. Each agency has its own structure of operations but, when required, has direct centralised access to the network (e.g. for crisis management). Similarly, each agency is able to operate its own network independently in line with its organisational structure.

Motorola is delivering its Dimetra Tetra infrastructure and services. The first phase completed in June 2007 and covers Lisbon and, Santarem with voice and Short Data Services (SDS). Some agencies are also piloting data applications such as image transmission and AVL (Automatic Vehicle Location). Nationwide rollout is to complete by 2010 and is on schedule, with a further rollout planned in the Island Azores archipelago in 2013.

Once complete, the SIRESP network will comprise a central switch, 550 base stations, 20 control rooms and nine remote nodes – with full redundancy provided via a second disaster recovery site. Radio coverage will be 95% of urban/suburban areas, motorways and main routes, as well as 90% in rural areas. Meanwhile, in-building penetration will reach 80% in urban areas and 50% in rural areas. Motorola is also deploying a national control centre.

In 2007, the Government ran a tender with the aim of evaluating subscriber terminals from leading suppliers and, of the 5,000 procured, 4,000 were provided by Motorola. The Government is now in the process of running a full tender for procurement of a substantial number of terminals, as more users are migrated to SIRESP.

As part of its remit within Siresp, Motorola is delivering training and ongoing support. "Agency migration from legacy networks to a greenfield system is a significant undertaking, with more than 55,000 end users to be catered for – including all of their support vehicles, systems and control rooms," says António Ribeiro, Country Sales Director, Motorola Portugal. "But it is not just the technology that has to be considered, but the fact that shifts are being worked 24/7 within the agencies; Thus change management is moving beyond the technology and into business processes."

**Tetra meets diverse operational requirements of mission-critical users**

Since commencing commercial operations, SIRESP has enabled Portugal's emergency services and public safety/civil protection authorities to collaborate seamlessly on the ground during major events and security operations. With improved voice quality and security of digital radio services, SIRESP is providing a reliable, resilient and fully managed communications network that is helping the emergency services meet their targets in terms of efficiency and response times.

"The result has been a vast improvement on the systems we had in place previously," confirms Col. António Porfirio, Head of GNR Communications and Information Services. "We now have better levels of coverage in both urban and rural areas – ensuring that our officers have reliable and instant access to both voice and data communications. And by operating via a single security national network, we have more confidence, flexibility, better coordination and realize operational synergies. Furthermore, Motorola's hand portables and Tetra radios provide high-quality audio communications and encryption of calls, with functionality suited to the demands of our diverse work groups. We also receive timely maintenance and upgrades that only a local provider is able to deliver."

Furthermore, the flexibility of Motorola's Dimetra infrastructure has proved essential in its support of the numerous third-party applications and hardware currently employed by SIRESP users, as they continue to adapt their the business processes to the capabilities of the new network.

For more information please contact your local Motorola Authorised Dealer or Distributor