



Motorola and Tetra Ireland Consortium Deliver National Public Safety Network



Overview: Republic of Ireland

Located in the north-west of Europe, the Republic of Ireland occupies 70,282 sq. km of the island of Ireland and has a population of approximately 4.2 million. The Government of the Republic of Ireland is committed to promoting investment in state-of-the-art communications infrastructures and, for several years, has been working towards deployment of a new National Digital Radio Service. As with a number of other European countries, the objective is to build a nation-wide network capable of serving the needs of the emergency (i.e. 'blue light') services and other non-commercial public sector agencies.

Challenge: To ensure a fully integrated service and response via a national digital radio system based on a single technology standard

Public safety agencies in the Republic of Ireland include An Garda Síochána (Ireland's National Police Service), Ambulance, Customs, Fire and Prison Services, together with a number of other public sector bodies. Historically, each agency has built and operated its own analogue radio network, with many using different frequencies and various types of subscriber terminals, making it impossible for most to run joint communications. As well as impacting their ability to collaborate on the ground, it was proving expensive for these agencies to maintain their networks, given that older analogue technologies lack the flexibility and functionality of modern digital two-way radio systems.

Recognising the need to ensure a fully integrated service and response, the Government began planning for a national digital radio system based on a single technology standard that could serve the diverse requirements of a broad range of emergency services, public safety and civil protection users. Increased radio coverage and security of both radio transmissions and agency personnel were of key importance, as was the ability to support inter-agency and inter-network communications. Also essential was the provision of coverage for air support and off-shore operations, together with improved voice quality and data capability. Moreover, the network was to be provisioned as a fully-managed service, delivering the levels of resilience and flexibility demanded by mission-critical users.

Solution: Tetra Ireland builds leading-edge network based on Motorola Dimetra IP

A competitive tender commenced in June 2006, attracting bids from five consortia. Following a thorough evaluation, Tetra Ireland was selected as preferred bidder. Comprising Motorola, eircom and Sigma Wireless, Tetra Ireland deployed a pilot system under a 'Service Performance Evaluation' (SPE) phase. Based on Motorola 'Dimetra IP', the system covered North Dublin with 14 base station sites and a Mobile Switching Office (MSO).

Organisation Name

Tetra Ireland

Technology Partner

Eircom and Sigma Wireless

Industry Name

Public Safety & Non-Commercial Government

Product Name

- Dimetra IP & MTS base stations
- Motorola handportables (MTP850) and mobiles (MTM800e)
- MIBAS terminal & billing management
- Integrated Full Vision network management

Solution Features

- Improved voice quality and radio coverage
- Data Services and SDS to mobile phones
- Eliminates eavesdropping and interception
- End-to-end provisioning & migration

Benefits

- Inter-agency communications
- Coverage for air and off-shore support
- Emergency 'single push' buttons
- Flexible build-own-operate model

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Pat Kelly, CEO, Tetra Ireland

Secure communication that is effective, resilient and reliable

By ensuring there is no single point of failure in the system, Tetra Ireland will provide a secure communications service that is effective, resilient and reliable. As well serving the needs of a diverse user base under a flexible build-own-operate model, it will also open up opportunities for new and improved service delivery by enabling end users to rationalise radio control rooms into a small number of dedicated specialist centres.

SPE saw extensive network testing, plus user engagement with subsets of the police, ambulance, fire and prison services. Potential events were simulated on the network, with agencies able to collaborate seamlessly using Tetra. In addition, Tetra Ireland's ability to migrate agencies to the new system, train users and equip a diverse fleet of vehicles with Tetra radios was verified.

“SPE allowed us to demonstrate that we could provide a working solution meeting the detailed specifications and standards demanded of the emergency services network,” says Pat Kelly, CEO, Tetra Ireland. “The SPE was a huge success – not only from a technical, operational and logistical perspective, but also in generating a great deal of enthusiasm for Tetra technology.”

Roll-out began in September 2008 under an eight-year 'build-own-operate' contract, with completion of full nationwide coverage due by mid-2010. At this point, approximately 20,000 users will have been migrated onto the system. Motorola is supplying the main switching and network infrastructure, the majority of subscriber terminals and end-user training, plus a host of value-added services.

The network will comprise two main switching sites – an eight-zone MSO located in Dublin, and a second disaster recovery site. The primary MSO employs multiple zones and automatic failover to the disaster recovery site to ensure a fully-resilient Tetra network. Approximately 600 base stations will provide coverage to more than 95% of the country, with the system fully integrated with mobile (cellular) and fixed-line (PSTN) networks. Fleetmaps were created as an inherent design feature, enabling each agency to operate its own talk groups, and talk to any other agency talk group. Each agency will also have a number of control rooms fitted with an Integrated Command Control System (ICCS).

Tetra Ireland is also implementing the Motorola Integrated Billing & Administration System (MiBAS), which allows the operator to store configuration files, talk groups, user names and IDs, to provision radios. It also facilitates all network billing, including off-net calls and packet data, while enabling TETRA Ireland to conduct live traffic analysis by region, site or user.

Mission-critical communications with unmatched voice quality, resilience and coverage

Using Tetra, Ireland's blue-light services will be able to make inter-agency calls at any time, with security assured via strict encryption separation on the network between shared and individual talk groups (via group Cypher Key). Voice quality, resilience and coverage will be higher than that of any other network in Ireland, while a unique system feature will enable users to send Short Data Service (SDS) messages to mobile phones, as well as being able to make/receive calls to fixed and mobile networks. For alarm management and full network visibility, Motorola has enabled integration between Dimetra IP's Full Vision management system and eircom's Netcool application at the operator's network management centre (NMC).

“Tetra Ireland was selected for the strength of its technical offering, which is fully compliant to the requirements of the National Digital Radio Service,” Kelly continues. “We are also unique in leveraging the expertise and assets of eircom and Sigma in the telecoms and PMR businesses respectively, coupled with Motorola as the infrastructure provider. Motorola is a proven provider of mission-critical networks and its Tetra roadmap will ensure the future success of the network over the next 8-10 years.”

Vincent Kennedy, Country Manager, Motorola Ireland Ltd., added: “The rollout of a Tetra network in Ireland further demonstrates Motorola's ability to work as a reliable partner in delivering nationwide systems to Government and public safety users.”



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