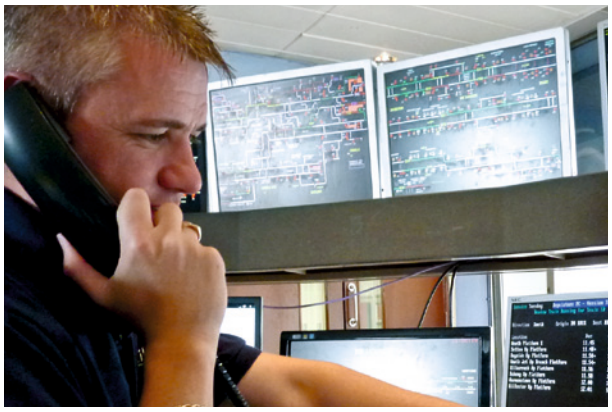
Iarnród Éireann

Irish Railways:
Improved services and reduced cost with FREQUENTIS



Iarnród Éireann's (IÉ) railway operations are controlled by signalmen, level crossing controllers and regulators at the Central Train Control (CTC) office in Dublin using a variety of communication systems. IÉ wanted to integrate all of its communications onto one system. The goal was to remove the need for many different operator terminals and hence improve services, reduce cost and prepare for the introduction of a new GSM-R train radio system.

Legacy, modern and future rail communications on one user terminal

Frequentis was able to meet all of these requirements in one solution. Rail communications are mission critical and were integrated into one system to meet the demands high reliability through resilience. A variety of legacy and modern equipment to be controlled over a variety of interfaces. In order to mee the requirements of current and provide the foundation to support other future operational requirements, a new GSM-R train radio system was deployed. Demands for high standards of ergonomic design leading to an intuitive layout were also achieved through this solution.

To ensure that the Integrated Communications System would cater to all functions of the existing communications systems, the team analysed the characteristics of each one. It was decided that the central processing of the existing analogue train

Client profile

A subsidiary of Córas Iompair Éireann, Iarnród Éireann provides passenger and freight rail services as well as operating Rosslare Europort.

Business situation

IÉ had four criteria they were trying to meet in the search for a new solution. High resiliency, flexibility, investment protection and ease of use.

Solution

Frequentis designed, manufactured, installed and commissioned the Integrated Communications System. The system is based on two standard Frequentis products: The Frequentis FTS 3020 communications platform and DICORA dispatch terminals.

Impact

The outcome of this project improved services and reduced cost. Services were improved through faster reaction time to calls in order to enhance train services and increase operational safety. Costs were reduced through the use of a standardised modular approach which incorporate legacy systems with GSM-R. This will allow for simplified expansion and incorporation of new functionality in the future.

"It was a really professional and co-operative partnership from the very beginning. The transition to the next system was extremely smooth and our controllers adapted to the new environment within a minimum time."

Ronan Finlayson, Manager of the DART Signalling & National Telecoms, Iarnród Éireann

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radio system (built in 1982 to UIC 751-3 and now obsolete) would be replaced. Frequentis replicated the functionality, including requirements unique to Ireland, with its FTS 3020 communications platform. The platform now controls the radio base stations situated along the track. The Integrated Communications System also manages the functions of two separate PABX systems for administration, one from Tadiran and the other from Ericsson, as well as a variety of lineside and operator-to-operator telephone systems. It was also necessary to interface with EIRCOM, the Irish public telephone operator, to allow emergency calls from public mobile phones to be connected.

User features

The user interface was based on the Frequentis VoIP-based DICORA dispatcher unit. Simplicity of use was a key requirement and was achieved through close cooperation with the customer and good ergonomic design. The DICORA was developed to provide access to calls originating from a variety of sources: train radio, lineside telephony, emergency mobile and admin telephony. The operator is also able to connect any combination of these calls in a single conference. The Integrated Communication System presents all calls in the same incoming call queue, and provides a mechanism to allow calls from specific sources to be accorded a higher priority. For example, an emergency radio call will always be presented before train radio calls in the operator's call queue. The ability to log into different geographical areas is built into the system, allowing operators the flexibility to manage all communications within specified geographical limits. This allows larger areas to be covered during quiet times and smaller areas to be controlled by another region if required. This could be required if an incident occurred and an emergency control operator needs to take over. Call logging and voice recording is provided to record evidence and allow incident management to be reviewed.

Reliability

The Frequentis system is the focal point for all railway operational communications and has a very high availability requirement. This high performance is achieved through a dual redundant design and the use of high-quality components. Frequentis strictly controls manufacturing and testing at their purpose-built facility in Vienna.

IÉ has plans to expand the system to cater for regional control centres and for long line public address systems. IÉ is already implementing the European digital train radio system (GSM-R) in the Dublin area, using the Frequentis Integrated Communication System to control it.

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FREQUENTIS AG
Innovationsstraße 1
1100 Vienna, Austria
Tel: +43-1-811 50-0
www.frequentis.com