

FGV Delivers New, Efficient Passenger Services Thanks to Modernised Network and Video



Challenge

- enable new services across the network, especially video
- modernise ageing network infrastructure
- more efficient use of available bandwidth to deliver new video-based services
- improve network redundancy and service reliability

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Solution

- presales consulting to define network requirements
- implementation of modern MPLS network
- ongoing maintenance and support

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Result

- new network is more reliable and stable, achieving over 99% availability
- more efficient network management reduced use of available bandwidth by over 80%
- improved redundancy – services are no longer affected by a single point of failure
- increased capacity and advanced technology features – enabled vital new multimedia services, including video surveillance

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‘The implemented solution **enables us to make much more efficient use of the network capacity available**, even when we’re deploying bandwidth-hungry applications like video.’

Julia Iserte, Head of Communications,
Ferrocarrils de la Generalitat

Challenge

Complex urban railway systems

Data networks play a vital role in the running of modern urban railway systems, supporting everything from passenger information systems to signalling across a complex mix of services. The situation at Ferrocarrils de la Generalitat Valenciana (FGV), a public rail provider in the Valencia region of Spain, is no exception.

Since forming in 1986, FGV has carried out an ambitious programme of modernisation, adding a metro network and tram lines to existing overland train services. This physical infrastructure requires constant surveillance, maintenance, and management – a task that's assisted greatly by applications and media run across the data network that connects central administration offices, stations, and other facilities. If passenger services are to run smoothly and efficiently, the performance and functionality of this network is critical.

About FGV

FGV is the public train operating company in the metropolitan area of Valencia, Spain. Since its formation in 1986, FGV has built the Metrovalencia underground network, introduced new tram services, and now serves more than 70 million passengers a year across 277km of network.

Old network holds back new services

As part of an ongoing modernisation programme, FGV decided to completely renew its data network in 2009. The company knew its existing network was unable to support new video-based services and there were also problems with bandwidth capacity. In addition, FGV wanted to find ways of creating greater reliability and redundancy within the network.

Julia Iserte, Head of Communications for FGV, explains: 'We found the old network was holding us back whenever we wanted to introduce a new application or service, both because of available bandwidth and the standards the network supported. We also had a pressing need to improve availability. If a single system failed, it often meant the whole network went down.'

FGV instructed a consultancy to find a solution, initiating a detailed two-year selection process that involved the assessment of several different technologies and a year of rigorous product testing. 'We had to make sure we got this process right,' Iserte continues.

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Solution

Modern MPLS network

After completing the selection process, FGV chose Dimension Data, Europe's leading experts in communications services, to implement a new MPLS network based on equipment from Alcatel-Lucent. The solution comprises service routers, access switches, and the Alcatel-Lucent 5620 Service-Aware Manager, which provides simplified, end-to-end management across the new network. 'We were very impressed with the solution,' says Iserte. 'It proved to be highly reliable during testing and, in terms of functionality and standards, provided a perfect match for our requirements.'

Crucially, Iserte was impressed by Dimension Data's recommendations in the bid process. 'They proposed the best technical solution that was appropriate to our needs,' she says. 'In addition, they were able to demonstrate they have locally based people with extensive experience in implementing and supporting the kind of network we were looking for.' Dimension Data worked closely with FGV in designing the solution, establishing the physical and logical topology of the network, and defining the various levels of service to ensure consistent availability and quality of service.

Simpler management

How does it work? FGV's new network consists of two core service routers at its central office, a further six distribution nodes, and over 70 access switches spread across the edge of the network. The Alcatel-Lucent 5620 SAM adds management capability, making it simple to provision new services, prioritise traffic, and trouble shoot issues as they occur, via a series of management procedures and alarms that were developed with Dimension Data's help. Because the network is MPLS-based it's also inherently redundant, making it possible for FGV to isolate services and prevent a single point of failure from crashing the network. System monitors all building systems and proactively alerts management of negative trends, faults or incidents that may impact human comfort, safety or operational inefficiencies.

The GBCSA will host some of the most influential sustainability leaders from around the globe in October 2013, as Cape Town was officially announced to be the host city for the World Green Building Council Congress meeting. The Congress attracts prominent thought leaders from over 91 Green Building Councils worldwide. Allan Gray's Silo 1 will be a key feature of this Congress, and some of the hosting events will be held inside the new building to showcase its features.

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Result

New video-based services

In terms of new services, Iserte and her team have already been able to roll out new video services, including surveillance systems and a new passenger information service in stations. Remarkably, the introduction of these services has not had a negative impact on bandwidth, in fact, quite the opposite. 'The Alcatel-Lucent technology enables us to make much more efficient use of the network capacity, even when we're deploying bandwidth-hungry applications like video', says Iserte. 'So far, we've reduced our use of the bandwidth available on our fibre-optic cables from 80–90% percent to around 2%.'

Iserte has been able to achieve some impressive figures in terms of network reliability. 'Because of the improved redundancy we have, we now achieve over 99% availability. This has an impact on the service we provide to our customers, ensuring minimal disruption to services, information and ticketing.'

Ongoing support and management

To cover any risks, FGV went for a Dimension Data maintenance and support contract, ensuring the new network is supported by locally-based experts, highly experienced in the technical nuances of modern, advanced networks that support multimedia services. Ongoing management of the network will be handled by FGV, from the Alcatel-Lucent 5620 SAM. 'We rely on this management software to proactively monitor issues and solve them as they occur,' says Iserte. 'The 5620 SAM is suited for managing large-scale networks such as ours. It was a key part of our decision to choose our solution.'

Future steps

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Services overview

- consulting services
- professional services: network design and implementation
- support and maintenance services