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Siemens and BT Wholesale keep traffic flowing with a resilient, managed communications network

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Siemens' customer, The Department for Infrastructure, Roads, Northern Ireland (DfI NI), needed to replace its aging traffic infrastructure with a stable, reliable, resilient and highly secure solution.



“BT Wholesale has been a great partner to work with on this project. The team were highly skilled and knowledgeable, and efficient at getting each stage completed on time and on budget. They understood the need for security and resilience and delivered that to our customer.” David Mills, Services Account Manager Northern Ireland at Siemens.

- Over 300 sites controlling traffic signals and junctions in Belfast are covered by the network
- Around 637 car journeys were taken per person, per year in 2014-2016 on the 25,500km of roads across Northern Ireland, according to the latest statistics
- BT Wholesale offers a fully managed 24/7 service to ensure continuous operation.

Challenge

The Department for Infrastructure, Roads NI wanted to upgrade the connectivity to its traffic signal boxes to ensure continuous smooth traffic flow around Belfast. The new infrastructure needed to be a reliable, secure and cost effective method for the out stations to operate and communicate their status back to the Control Centre.

Solution

BT Wholesale upgraded the aging infrastructure with its Managed Dual Path solution. By deploying a combination of mobile and broadband technology the network is highly resilient with continuous secure connectivity. The out stations are able to transmit their status at regular intervals to ensure free movement of traffic around Belfast.

Summary

IT services giant, Siemens has a long-standing customer in The Department for Infrastructure, Roads, NI. The government division wanted to upgrade its traffic management systems alongside other hardware and software. Managing the entire project and bringing the solution together Siemens engaged with BT Wholesale to help with network connectivity across the region.

There are 25,591km of public roads in Northern Ireland, with 22% urban and 78% rural. At April last year there were 1.1m cars on these roads. It is the responsibility of the DfI NI to maintain and uphold these carriageways to a high standard to ensure ease of congestion and that residents and visitors to the region are confident of their safety on the roads.

The DfI NI runs more than 300 outstations that control and maintain traffic signals across the region. These outstations send data back to main control, which is then able to adjust traffic lights signals to manage traffic priorities and hence ease congestion.

The challenge

The DfI NI had an aging private wire system connecting its 300+ outstations, which transmit data to the main control centre where it's used to manage traffic light signals and sequences. The private wire system had become obsolete and unsupported, and no longer served the requirements of the modern roadways in Belfast.

The DfI NI required new connectivity and a data network solution that was very reliable and highly secure.

While the level of data transmitted is small, outstations that fail to send data to traffic lights, or unsolicited interruptions to the service are unacceptable and could cause disastrous traffic problems for the region. Any new system needed to integrate seamlessly with the remaining infrastructure and also be easily manageable from the main control centre.

As part of the public sector, the timeframe, deadlines and budgetary constraints also had to be taken into consideration. The DfI NI was keen to save costs and gain greater ROI with the planned upgrade.

The BT Wholesale solution

The BT Wholesale solution designed for Siemens and the DfI NI makes innovative use of both Private DSL and mobile technology using Managed Dual Path routers - GW7314 Service Managed Gateways - to cost effectively deliver connectivity that is secure and resilient.

The Managed Dual Path ensures continuous availability and reduces downtime by combining broadband lines with mobile technology. If there are any interruptions on the primary broadband line, the router automatically switches to the mobile data path, ensuring reduced downtime. The outstations send status data back to the main control centre where the team at the DfI NI is able to manage traffic flow across Belfast. "We evaluated a range of systems, but BT Wholesale was the only one who could cover all 300+ sites," said David Mills, Services Account Manager Northern Ireland at Siemens.

A combination of teams from BT Wholesale and Siemens worked to connect the broadband, while maintaining the older private lines to ensure there was no loss of service while installation occurred. "During

the installation process we worked very closely with the BT Wholesale team," said David Mills. "The timeframe was tight and because of the legacy technology required we needed expert help. The BT Wholesale team provided the expertise and working together we hit the deadlines."

This IP solution provides a managed, resilient communications link that will ensure connectivity to all traffic lights. As an added part of the service, BT Wholesale monitor the entire system and conduct diagnostics 24 hours a day. "If one of the outstations has a fault, BT Wholesale is highly proactive; they reboot the routers remotely and fix any problems before we or the DfI NI even know about it," said David Mills. Previously this would have taken hours or even days for faults to be diagnosed, engineers to visit the outstation and the problem fixed, he added.

The other pressure for the DfI NI was that the solution had to deliver cost effectiveness and ROI. With BT Wholesale the DfI NI secured longer term contracts, delivering immediate costs saving over the legacy technology and longer term ROI.

The future of the partnership

The DfI NI is continually looking for ways to improve its traffic management system and because of the success of the Managed Dual Path project, is adding new out stations to the network at a rate of four to five per year.

"This is an organic project," said David Mills. "It's increasing all the time as we aim to make the whole infrastructure more effective." Over the next few years, David Mills said the DfI NI is looking to move everything to the cloud to gain even greater efficiencies.



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