



Motorola's Wireless Broadband Helps Glasgow's Buses Run On-time



Business value

The network enables the control room to make adjustments to signal phasing based on immediate assessments of traffic volumes to clear free-moving bus corridors. As well as helping to keeping services to time, MOTOMESH delivers financial benefits. The wireless coverage is quickly and easily established: factors that reduce capital expenditure. Also, as the system is a private network, the council doesn't need to pay subscription fees to access the wired infrastructure of telecoms companies.

Glasgow City Council

Glasgow City Council administers Local Authority services for the city's population of 600,000. Situated on the west coast of Scotland, Glasgow is easily accessible by road, rail and air, is one of Europe's top 20 financial centres and is home to many of Scotland's leading businesses.

Streamline: encouraging people to leave the car at home

In common with many large cities, Glasgow's centre can become congested with traffic. The Streamline initiative aims to influence traffic flow in preference of buses to attract more passengers, which, in turn, will reduce congestion.

Says Hamilton Purdie: 'Carrying about 40 times more people than the car, the bus reduces congestion and tackles pollution. The premise of Streamline is that, if the buses are reliable, people are more likely to use them. Streamline aims to keep buses to timetable intervals providing a predictable service around which people can structure journeys.'

Glasgow's road team is recognised for its progressive approach to managing traffic flow; it was one of the first Local Authorities to install a dedicated traffic management centre (it opened in 1967) and it's committed to applying the latest technology to enhance its operations. As evidenced by Streamline.

Streamline: core systems

Streamline's management of bus services is a continuous, real-time process co-ordinated by the Bus Information and Signalling (BIAS) application. It collects information from Global Positioning Systems (GPS) fitted to 500 buses to track the progress of services through eight key 'tracks' across the city. If a bus slips behind schedule, BIAS registers this and alters signal phasing to provide the vehicle with priority at traffic lights.

Complementary to BIAS is 'SCOOT' traffic management software. SCOOT collates data on traffic from road sensors. It applies this intelligence to anticipate congestion that may impede buses so that signal phasing can be adjusted accordingly to keep services on schedule.

CUSTOMER PROFILE

Enterprise

Glasgow's bus system

Industry

Public sector

Challenge

To underpin the traffic analysis and control systems that will improve bus services, a communications network was required.

This would send real-time intelligence on congestion levels to the control centre, and provide the facility to adjust traffic light phases to expedite the progress of buses through the city. The network had to cover eight key bus routes totalling 140 kilometres.

Resolution

A Motorola MOTOMESH™ wireless network has been created. It comprises 241 wireless 'nodes' providing the communication system via 83 Intelligent Access Points for real-time congestion information to be sent to the control room. It will also enable 241 traffic signals to be controlled remotely.





“Streamline will ensure that Glasgow’s buses run to timetable intervals so encouraging people to leave the car at home. A core component of the system is Motorola’s MOTOMESH communications network. It enables the control centre to receive real-time traffic information from roadside monitors, and traffic light phasing to be controlled automatically to smooth the progress of services. MOTOMESH was easily installed and, as it’s a private system, we don’t pay expensive license fees. The project’s still under way but we’ve been very impressed with the robust performance of the network.”

— *Hamilton Purdie, Assistant Strategic Traffic Control Manager,
Glasgow City Council*

At the Streamline traffic control centre, high-end servers have been installed. These collate the information from roadside sensors and GPS systems on which decisions are predicated by BIAS and SCOOT to re-phase lights to free the passage of buses. ‘In road-management circles, both BIAS and SCOOT are recognised to be the de facto systems for effecting improvements in traffic control,’ says Hamilton Purdie. ‘With these systems in place we needed to create a digital network to receive data from roadside sensors and remotely control signals.’

Network needs

Pivotal considerations behind the selection of network technology was reliability and security—the roads team required broadband speeds and utmost reliability commensurate with 24/7 operation. ‘While these demands would suggest a wired network, we were concerned about the expense. It’s impractical and cost-prohibitive to build our own infrastructure, while accessing the systems of telecoms companies

requires ongoing fees,’ says Hamilton Purdie. ‘Our technology partner in Streamline advised that wireless broadband provided the answer’.

MOTOMESH: no compromise performance

After reviewing network options, Glasgow City Council approved the installation of a MOTOMESH wireless broadband network.

‘This decision was predicated on several factors,’ says Hamilton Purdie. ‘MOTOMESH originates from the military’s need for easily provisioned and robust battlefield communications. It’s therefore very reliable and incorporates a range of technologies to slice through “background noise” generated by other wireless systems in built-up areas. Performance is twinned with cost benefits: the network is easy to install reducing capital expenditure, is fail-safe so it’s low cost to maintain and, as the infrastructure is private, we don’t pay subscription fees. MOTOMESH is convenient too; we can use our existing street furniture to site equipment.



MOTOROLA

Motorola, Inc.

1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A.

www.motorola.com/motowi4

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