



Wiltshire Council convert to GPRS using **Mobius Networks** to improve RTPI performance

The Real Time Passenger Information system (RTPI) in Wiltshire is operated through a partnership between the Local Authority and local bus companies. It forms an integral part of the Intelligent Transport System in the Salisbury area and covers a number of key bus routes. The system is supplied and maintained by Trapeze Group (UK) Ltd.

RTPI provides accurate timetable and route information to users. Data is transmitted between the vehicle, the server at the control centre and displays at bus stops and this helps passengers to accurately plan their journeys. Wiltshire had chosen Private Mobile Radio (PMR) as a way of transmitting the necessary data but performance levels were raising concerns.

Wiltshire Council therefore conducted detailed investigations to discover the causes and found the main weakness to be the radio communication element. The radio coverage was patchy and signal blackspots in rural areas meant vehicles were being poorly tracked. This in turn was leading to incorrect predictions of delays on the signs at the bus stops and a general lack of real time information. Improvements to the radio system were made but although performance increased it still remained below a satisfactory level.

It was clear that radical action was necessary so Wiltshire Council initiated a trial using General Packet Radio Service (GPRS) and mobile phone technology. A number of buses on the Warminster to Salisbury route were fitted with GPRS communications equipment which connected them to the Mobius Private Mobile Network. The difference was staggering. System performance on the trial buses was 35% better than those on the same route using PMR. Mobius Networks are Vodafone's preferred distributor of the Machine to Machine (M2M) data SIMs which are used in the RTPI systems which use GPRS.

Following the success of the trial, Wiltshire Council recommended converting to GPRS. As well as the proven accuracy and reliability of the system there were financial and security advantages. It was estimated that costs over a five year period would be less than with PMR. The PMR system relied on four radio masts under police ownership and as well as the rental costs of these there would also be future costs for converting to a different radio frequency as required by Ofcom.

Maintaining public confidence in the system is also important to encourage the public to make journeys by bus rather than car. When RTPI works efficiently it has been shown to increase use of public transport. However, user confidence can quickly be eroded if the system fails on a regular basis.

With the Mobius Private Mobile Network the Council would have added security as the RTPI system would be isolated and protected from the threat of attack that is possible on the open internet. Accurate budgets can be set due to a unique arrangement between Mobius and Vodafone that provides a detailed breakdown of billing to the byte and because data use limits can be set for each SIM.

Converting from PMR to GPRS has given Wiltshire Council a more reliable and efficient RTPI system with an expected 45% improvement in performance. There is also the option to extend the system to include bus priority at junctions and real time information delivered to mobile phones and the web.

THE CHALLENGE

Wiltshire Council's Real Time Passenger Information system (RTPI) was under-performing and not delivering the full range of information to bus users. The council and its transport partners were relying on a Private Mobile Radio (PMR) network and investigations revealed that areas of non-existent or patchy radio coverage were too extensive to enable reliable real time information to be displayed in all locations, particularly along rural routes. Extending the PMR network would have represented a significant increase in cost. So, time effectiveness of GPRS needed to be evaluated.

THE SOLUTION

A trial installation using General Packet Radio Service (GPRS) was set up. By using services provided by machine to machine specialist Mobius Networks in partnership with Vodafone, Wiltshire Council was able to significantly improve its RTPI services and eliminate the problem of signal drop out in rural locations.

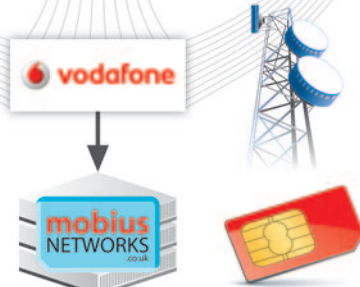
THE BENEFITS

As a result of the successful trial Wiltshire Council recommended a move from PMR to GPRS to ensure the reliability of its RTPI system.

- 45% improvement in RTPI performance is expected
- No cost increase to council by converting to GPRS
- Possible cost savings over five years
- Mobius Private Network is secure and reliable
- Real Time report monitoring
- Detailed billing platform



RELIABLE AND SECURE CONNECTION VIA VODAFONE NETWORK



RELIABLE AND SECURE CONNECTION VIA VODAFONE NETWORK



THE PROCESS

Information about the progress of the bus journey and arrival times at each stop is transmitted via GPRS between the AVL unit on the vehicle, the server and the on-route signs. Data is only pushed when needed rather than the continuous 'question and answer' process used in non-Mobius systems.

Mobius use specific Access Point Names to channel the data through dedicated data pipes to Mobius-hosted servers. Each unit then handshakes with a unique username and password, is allocated a fixed IP address and then pushed through to the destination.

- Data is accurately relayed even when the vehicle is in rural locations
- A Mobile Private Network keeps mobile devices off open internet access
- Mobile fixed IP supports true bi-directional data
- The Vodafone network has the capacity to handle the huge demands created by increased mobile data usage

For more information about how Mobius, Vodafone and RTIG can cut costs and improve services

www.mobiusnetworks.co.uk
www.rtig.org.uk

