Transport for Buckinghamshire

In 2009, the Council was awarded £4.55 million of Community Infrastructure Funding from the Homes and Communities Agency to implement an urban traffic management & control (UTMC) scheme. This was an important element of the Transport Strategy to provide better traffic management and monitoring capabilities across the town which will benefit residents and visitors alike. The scheme ensures that growth will be accommodated and will help to deal with congestion.

The information collected is provided to the general public through the web, mobile phones, public information screens and variable message signs, so journeys can be planned using up to date information.

The UTMC project objectives were as follows:

- To support Primary Public Transport Corridors (PPTCs)
- To secure journey time reliability on Primary Congestion Management Corridors (PPMCs)
- To coordinate traffic signal control systems
- To collect real-time data on traffic and travel conditions
- To publicise traffic patterns to support travel choices
- To improve air quality
- To prioritise road capacity for public transport
- To reduce travel times and delays
- To display dynamic car park information and travel information

The initial project consisted of 21 wirelessly enabled areas (NAPs) across a 156 square Kilometre area. Rapier Systems understood that reliable communications were key to the implementation of a project of this nature. A traditional implementation would use a combination of leased lines, private fibre, 3G & GPRS technologies to every network element, with a huge recurring cost, long lead times, excess construction and multiple suppliers.

In collaboration with Telindus (UK) Ltd, Buckinghamshire County Council's (BCC) incumbent data solutions provider, Rapier used the councils own buildings & assets to provide a wireless PtP/PtMP network to deliver IP communications into key areas (NAPs) around the town alongside the existing fibre based communications that were extended in some areas. This was delivered to existing street furniture – primarily lighting columns. Once at street level, a self healing MESH based system was deployed at the NAP, installed on lighting columns, with low cost subscriber units delivering IP connectivity for the UTMC network devices, such as

cameras, Variable Messaging signage (VMS), Dynamic Car Park space allocation signage, ANPR Cameras, Traffic Management CCTV and pedestrian crossings. These devices varied from installation within roadside cabinets, internally within VMS/signage and mounted on the columns of crossings to provide MESH coverage of all required devices with robust, low latency IP communications.

In 2012 The network was extended to cover areas within High Wycombe (Phase 2) using the wireless infrastructure to connect privately owned BCC "on Street" fibre that connected several areas of UTMC equipment back to Hub sites that were on the BCC core network.

Furthermore in 2014 the system was again extended in areas of Aylesbury with an extension to the system to allow the connection of Bus Stop RTPI system within the NAP areas giving the bus stops connectivity to the Internet & council servers to display up to date travel and bus information.

Currently (Late 2015) the wireless system is being extended again to encompass more Bus stop locations within Aylesbury & High Wycombe for the RTPI systems and also now for Public Wi-Fi access.

The Deployed System was operational from 2010 and since this time has proven itself to be robust, reliable and most importantly cost effective for the council to improve services in town and remote rural locations without high cost OPEX connectivity.

"Rapier Systems & Telindus combined, offered a UTMC solution to fit our needs for now and into the future. The combination of fibre and wireless allows for the density of connectivity we require at street level while giving the ability to move & expand where necessary."

Anthony Blackmore

Transport For Bucks.

About Rapier Systems

Formed in 2003 Rapier has unrivalled expertise in the design, delivery and support of wireless (including WiFi) networks and systems; the company is a value added integrator of best-in-class wireless products.

Whether within or between buildings, upgrading or replacing existing networks, or designing and installing new wireless systems, Rapier's experience in environmental analysis and network design ensures complete coverage and optimal performance.

Rapier works with world leading wireless system vendors, including Ruckus, Alvarion, Airtight, Cambium/Motorola, Ceragon, SAF Technika and several more. The company has reached the highest level of accreditation with each of its partners and understands which vendor and product is best suited for each environment.

Rapier has grown dramatically on the back of a surge in demand for wireless networks, which it has designed and installed in a wide variety of challenging environments from colleges and oil rigs to business parks and theatres.

Rapier maintains Scotland's largest Wireless Network, covering Dundee City, Angus and Perth & Kinross Councils, which comprises around 250 sites.

The company has designed and delivered some of the most innovative wireless solutions in the UK, including the largest metropolitan area wireless network in Scotland and one of the largest county-wide wireless networks in England. Rapier delivered the 1st fully licensed Gigabit wireless link in the UK.

The company's headquarters is located in Fife, Scotland and it has offices in St Neots, Cambridgeshire, England.

Rapier has a UK wide customer base in sectors that include Local Government; Transport, Renewables, Oil and Gas, Retail and Leisure.

For further information please visit **www.rapiersystems.com**