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Jon-Paul Clarke discusses the UK's West Midlands Police Force's innovative solution to an ANPR communication problem: a data-secure M2M platform

For systems integrators, local authorities, police authorities and organisations involved in the implementation, management, delivery and integration of camera technology such as CCTV and ANPR (automatic number plate recognition), the transference of critical data securely and efficiently is a key aspect in creating resilient systems.

Challenges that such operators can face include the need for static IP to the device, the creation of secure connects and interconnects, and the overall management and control of numerous deployed units connected, in the main, across cellular networks.

CONNECTING ACROSS CELLULAR NETWORKS

To implement appropriate platforms, such organisations turn to Mobile Network Operators (MNOs) and Managed Services Providers to steer a course to suitable solutions. And it is here that seeking relevant and cost-effective connectivity platforms can mean success or pain. Today the choice of provider and their sector knowledge can dictate the direction in creating systems that work, or ones that excel - tailored to the precise demands of the sector.

As an example of this, the UK's second largest police force, West Midlands Police, were operating an estate of ANPR (Automatic Number Plate Recognition) cameras - both in vehicles and at fixed sites. Having adopted an 'off the shelf' MNO solution as part of an existing voice-focused framework agreement, the structure set in place was far from efficient;

- A requirement for each router configuration to be customised at the time of deployment
- Dynamic IP addressing making VPN configuration difficult



“Having adopted an ‘off the shelf’ MNO solution as part of an existing voice-focused framework agreement, the structure set in place by West Midlands Police was far from efficient”

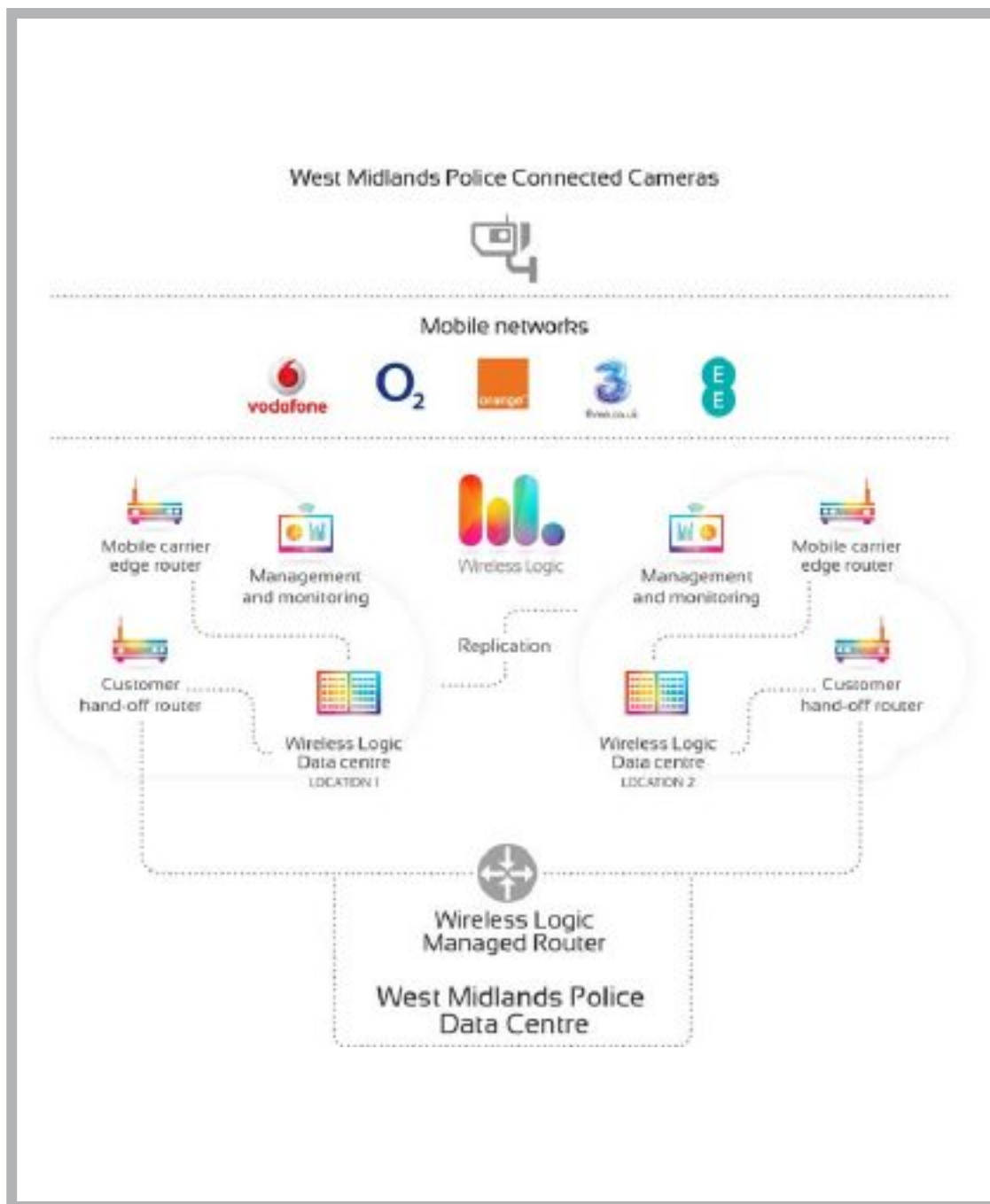
- Individual VPN tunnels to each device making management complex.
- VPNs (Virtual Private Network) terminated directly into their internal network - unsatisfactory from a data security perspective
- Utilising an adapted mobile solution with high latency levels.

CONSOLIDATING THE SOLUTION

Having audited the existing platform, West Midlands turned to Berkshire-based Wireless Logic to identify a more focused 'end to end' solution to the cellular connectivity challenge. With over 1.7m SIM subscriptions behind them, the highly experienced Wireless Logic team delivered a consultancy-led review and approach to the challenge employing

direct experience gained from similarly implemented applications. Additionally, as a 'network agnostic' provider, they would bring choice by enabling the force to select multiple MNOs within their chosen platform instead of being tied to only one network.

NetPro, Wireless Logic's managed network solution enabled the authority to establish a DMZ on the edge of their internal network. A fully managed Cisco 2900 series CPE was incorporated into the solution. This provided resilient interconnects with automated failover managed via BGP into Wireless Logic's POPs. A multi-operator private APN solution was then built for West Midlands delivering a fixed IP address to each ANPR router. The solution also enabled a single ANPR router configuration



location to be deployed which is particularly important for fixed location high-bandwidth applications such as ANPR. The SIMPro platform also provides granular security permissions enabling different user teams to manage stock, SIM provisioning, day-to-day operations and billing and analysis.

SINGLE SOURCE PROVISION

To create a seamless one-stop procurement, Wireless Logic has partnered with three UK mobile operators, O2, EE and Vodafone. This, along with the management platforms enabled West Midlands Police to acquire the entire solution through a single source.

Provided as a proof of concept model, the trial initially connected 70 mobile camera sites. With minimal commitment and commercial risk from the outset, the solution allowed the force to road-test the infrastructure prior to a major roll-out featuring multiple fixed and mobile units. And with the flexibility of utilising several mobile networks across the one platform, West Midlands can now implement connected solutions based on optimal coverage.

This example highlights how public sector camera operators can effectively streamline connectivity services, decrease both CAPEX and OPEX, and meet the dictates of delivering secure, two-way communication, all achieved by the leveraging of market knowledge and expertise from a specialist M2M provider such as Wireless Logic. For West Midlands Police, the existing solution was de-constructed and rebuilt to deliver a comprehensive platform, fit-for-purpose and highly scalable. Providers such as Wireless Logic have the capability to deliver custom solutions rapidly whilst complementing the generalist services from a MNO.

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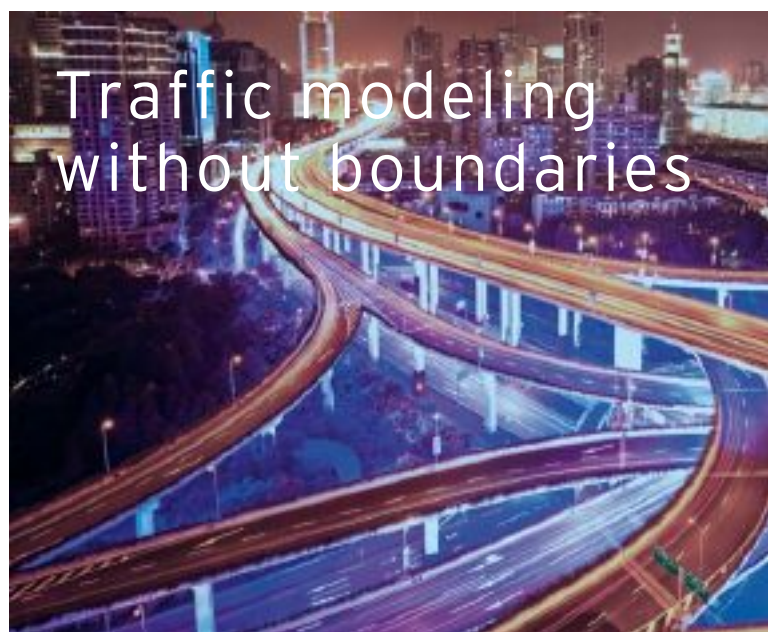
to be developed, greatly simplifying both initial configuration and ongoing management.

Capital expenditure (CAPEX) costs for the setting-up of such infrastructures are often prohibitive to organisations that don't typically factor in expense for secure connectivity. With NetPro, CAPEX was factored as OPEX (operational expenditure) when combined with monthly SIM subscriptions.

West Midlands have full lifecycle management, control and visibility via Wireless Logic's SIM provisioning and

SIMPro control platform. The platform provides users with full details of all SIM cards; current status, usage data, and the ability to combine SIM information with other customer specific information, such as camera locations, router specifications and serial numbers.

With SIMPro, total management of a broad-based SIM estate can be simplified. Using SIMPro, users can take inactive SIM stock from multiple mobile networks and activate for just in time deployment. This enables them to identify the best carrier for a particular



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