Case Study: Journey Time Measurement via iMesh™

Introduction

IDT have supplied an iMesh wireless network to link approximately 650 signal-controlled junctions in Birmingham.

iMesh provides secure wireless links enabling ‘clusters’ of junctions to share a single ADSL link to the UTC instation, thereby delivering significant revenue savings to Birmingham City Council.

IDT have developed a version of iMesh which detects the presence of wifi-enabled mobile phones in the vicinity of an iMesh router. By matching hashed mobile IDs at more than one location a time for travelling between those locations can be derived.

Birmingham City Council and their partners, Amey, have deployed a trial of the iMesh-JTM product on six junctions on the A38 (Tyburn Road).

This case study has been written mid-way through the trial. The product and solution should considered as being in its development phase and therefore subject to further analysis and change.

The scheme area

The image above shows the 6 junctions on the A38 that have been equipped with iMesh-JTM. The 6 junctions are part of two clusters comprising a total of 13 iMesh-equipped assets including pelican crossings, CCTV cameras and signal repeaters.

The distance over the whole scheme is approximately 2Km. The distance between E4425 and E4421 is approximately 630m.

Two critical requirements were: there should be no long-term impact on the UTC data network; and there should be no need for dedicated, additional communications links to the instation just to support JTM functionality.

Preliminary results

The graphs below show the iMesh-JTM results between sites E4421 and E4425 in both directions between 0200GMT and 1616GMT on Friday 10/06/16.
As part of the Opticities project, iMesh-JTM data is sent in real-time to the Cloud Amber-supplied common database. As iMesh-JTM supports the UTMC XML schema for ANPR systems, data can be aggregated with data from other sources to give a very accurate, real-time picture of journey times throughout the city.

Deployment and Data management
Deploying iMesh-JTM required restarting the iMesh router at each site (a downtime of approximately 3 minutes) during which time UTC communications was interrupted. There has been no ongoing impact on UTC operation.

As iMesh-JTM uses the existing backhaul for the UTC system there are no additional communications costs.

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