

## **Retrieving Trip Information from a Discrete Detectors Network: the case of Brisbane Bluetooth detectors.**

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### **ABSTRACT :**

Automatic Vehicle Identification Systems are being increasingly used as a new source of travel information. As in the last decades these systems relied on expensive new technologies, few of them were scattered along a networks making thus Travel-Time and Average Speed estimation their main objectives. However, as their price dropped, the opportunity of building dense AVI networks arose, as in Brisbane where more than 250 Bluetooth detectors are now installed. As a consequence this technology represents an effective means to acquire accurate time dependant Origin Destination information. In order to obtain reliable estimations, however, a number of issues need to be addressed. Some of these problems stem from the structure of a network made out of isolated detectors itself while others are inherent of Bluetooth technology (overlapping detection area, missing detections,...).

The aim of this paper is threefold: First, after having presented the level of details that can be reached with a network of isolated detectors we present how we modelled Brisbane's network, keeping only the information valuable for the retrieval of trip information. Second, we give an overview of the issues inherent to the Bluetooth technology and we propose a method for retrieving the itineraries of the individual Bluetooth vehicles. Last, through a comparison with Brisbane Transport Strategic Model results, we highlight the opportunities and the limits of Bluetooth detectors networks.