

New Technologies in Data Collection and Analysis



Overview

Mobile Network data and AI Vision Analytics are two of the newer data sources to the strategic planning and operational aspects of transportation projects. They have varied benefits over existing traditional data collection sources due to their sample sizes, geographic extent, consistency, and the ability to request data in real-time or over defined time periods. Transport operators and public sector organisations are using a variety of mobile network and big data sources to improve their operational decision-making and provide a richer evidence-base for their strategic decision-making.

This course provides an introduction into how these, and other new and emerging datasets are collected, analysed, and used in the transportation industry. Alongside this, the course will provide a summary of use cases and highlight the benefits and limitations of each data source.

Learning outcomes

On completion of the course, delegates will:

- New technologies in data collection in transport – mobile network data, AI Vision Analytics, GPS, Bluetooth/Wi-Fi and ticketing data.
- Transportation case studies using these data sources, both in terms of strategic planning and real-time operations.
- How mobile network data is collected and processed.
- The types of information that can be extracted from the datasets.
- The measures implemented to protect privacy.
- Benefits and limitations of the different sources.
- Introduction into how AI Vision Analytics technology works
- Know what questions to ask when discussing requests with suppliers
- How to validate and process data they receive.

Who should attend

This course has been developed for transport professionals involved in strategic planning, incident management & planning and operational planning wishing to develop their knowledge and proficiency, ranging from private sector and public sector organisations.

Topics covered

- Introduction to new and emerging data in transportation
- Mobile Network Data
- AI Vision Analytics
- GPS Data
- Bluetooth/Wi-Fi Data
- Ticketing Data

Programme*

Introduction and objectives

Background

Introduction to New technologies in transport data collection and analysis: MND, GPS, AI Vision Analytics, Bluetooth/Wi-Fi and ticketing.

MND – Introduction and Trip Purpose

An introduction to how the technology works; Differences between 2G/3G/4G/5G; How and why events are generated and how they are probed by the operators.

MND – Mode Identification and Routing

Understanding how mode and route is derived from the mobile data events, focussing on road and rail.

BREAK

MND – Biases, Limitations and Validation

Understanding where mobile network data is limited or biased and the reasons for this. Evaluation of data outputs compared to reference data including census data, NTWM and NTS sources.

MND – Visualisation and Basic Pre-Processing

Description of how to perform initial pre-processing and visualisation of the data, including the software and skills required.

MND – Procurement of MND

This session will focus on how to work with mobile network data on a project; How to define a study period, the project zones and trip purposes; How to maintain data privacy and how it is aggregated.

BREAK

AI Vision Analytics

Introduction into AI in vision analytics; how it works, development, use cases and limitations. This will include the different suppliers in the market and how their products and services vary.

Bluetooth/Wi-Fi

Background and overview of the use of Bluetooth and Wi-Fi tracking in transportation, along with use cases, strengths and weaknesses.

GPS Data

Introduction into how GPS data is collected and processed into road-speed information. Including different methods and solutions in the industry. Smart Cards and E-ticketing Data. A description of the big data sources available in public transport.

BREAK

Interactive exercise on Data Fusion

Innovation & the future

Q&A

Course review & feedback

Close

* Please note that this is a preliminary course programme and is subject to change

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Course Name and Location

Title	First Name	Surname
Position		
Organisation	Department	
Email		
Telephone		
Address		Postcode
Dietary or access requirements		

Attendance Fees (Please write amount)

Standard Rate _____ + VAT CILT/Local Authority/Charity Rate _____ + VAT

Method of Payment

Card Number	<input type="text"/>	CSV Code	<input type="text"/>	Expiry Date	<input type="text"/>
Card Holder's name and address (if different from above)					
Postcode			Purchase Order Number		

Invoice	<input type="text"/>	Invoice name and address (if different from above)
Please attach a copy of your purchase order made payable to PTRC		

Cheque Enclosed for £ _____ made payable to PTRC

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Name Signature

Date

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Terms & Conditions

1 Registration Form Applications should be made on the official registration form. Photocopies are accepted. One form should be completed for each delegate attending the event. It is important that all sections are completed legibly. Delegates are advised to retain a copy of the registration form for reference before sending. **2 Fee** Fees include attendance at lectures, lecture notes, lunch and all refreshments unless otherwise indicated. Fees do not include overnight accommodation, breakfast and evening meals unless stated. **3 Acknowledgement** Receipt of a registration form will be acknowledged by email, delegates will be sent an invoice and an email of acknowledgement. Joining instructions, including a map, will be sent to each delegate by email approximately one week before the start of the event. **4 Payment** Unless otherwise stated payment in full must be made at the time of booking. All prices are exclusive of VAT, unless stated otherwise. **5 Cancellation** All cancellations, or alterations to a booking, must be received in writing. To avoid cancellation penalties, substitutes will be accepted at any time, if notified in writing and in advance of the event. Adjustments in fees will be made if there is any change in fee category. Cancellations received in writing up to 7 days before an event will be subject to an administration fee of £75 + VAT or the event delegate fee whichever is the lower. Cancellation within 7 days of the event date or a 'no show', will be liable for the full fee. **6 Disclaimer** PTRC reserves the right to vary the programme and to cancel an event if it is under subscribed or for any other reason. In the event of cancellation, where reasonably possible, PTRC aims to give delegates at least one week's notice and the fee will be refunded in full. PTRC will not be held liable for any pre-booked travel, accommodation or similar costs incurred under any circumstances whatsoever. **7 Data Protection** Details will be held on a database in accordance with the 1998 Data Protection Act. Information will be used for internal marketing purposes only and will not be shared with any external organisations.