

## Introduction to SATURN - Course Outline

A three day introductory training course for either new and/or inexperienced users wishing to understand more about SATURN and its practical applications.

### Introduction

- What is transport modelling?
- Department for Transport's Transport Appraisal Guidance (TAG)
- SATURN basics and typical applications

### Matrix Building

- What are matrices?
- Data sources for travel demand
- Various operations in MX
- Conversion to SATURN format
- Using MX – manipulation options, stacking, unstacking, factoring, sectoring
- Control files

### Understanding SATURN Networks

- What are simulation and buffer networks?
- Important concepts for network building
- Buffer networks - link characteristics and speed flow curves
- Simulation networks - node type, data structure, components

### Building a SATURN Network

- DAT file structure
- Coding simulation junctions - priority junctions, roundabouts and signals
- Coding of centroid connectors
- Turn bans and tolls
- Coordinates, bus routes and count data
- Generalised cost
- Check network errors – LPN files
- Coding simulation junctions (using P1X and DAT file)
- Introduction to SatCoder

### Assignment and Convergence

- SATURN assignment process - tree building, speed/flow and flow/delay curves, assignment types,
- SATURN's strengths - including blocking back, downstream flow metering and cyclic flow profiles
- Detailed junction modelling
- Why does convergence matter?
- Parameters of importance
- Convergence guidance
- Causes of poor convergence

### Model Outputs

- P1X graphical outputs - link, node and turn attributes
- Secondary analysis options - select link, joy rides, trees
- Introduction to SatView
- SATLOOK, SATSTAT and SATDB

### Extras

- Useful shortcut SATURN modules
- SIGOPT and SIGOFF
- Area charging
- Tree building updates in 11.6
- Using control / batch files