SIDRA SOLUTIONS
PO Box 1075G, Greythorn, Vic 3104 AUSTRALIA
ABN 79 088 889 687

For all technical support, sales support and general enquiries:
support.sidrasolutions.com

SIDRA SOLUTIONS

SIDRA IN-PERSON TRAINING WORKSHOP CONTENTS

Left-Hand Traffic | Metric

The content of this training program has been prepared according to **driving on the left-hand side of the road** and **using Metric units** for countries such as Australia, New Zealand, South Africa, Malaysia, Singapore and India.

Scope

This intermediate to advanced level training workshop is offered for SIDRA INTERSECTION users with a basic level of experience including those who have attended the beginner level INTRODUCTION TO SIDRA online training. Attendees will learn features of SIDRA INTERSECTION that are essential to modelling cases of practical importance including some complex intersection and network cases.

The workshop combines hands-on sessions and instructions to teach participants how to effectively use SIDRA INTERSECTION, and how to apply and interpret results from the model to solve intersection and network problems.

SIDRA MODEL FUNDAMENTALS online training is also recommended for SIDRA users with any level of experience. This will be of benefit to users interested in more information on the essential concepts of traffic modelling and principles of traffic analysis.

Module 1 - SIDRA for Traffic Signals

Signal Timing Analysis in SIDRA INTERSECTION

Phase Sequence data. EQUISAT (Fixed-Time / SCATS) and Actuated timing analysis.
Signal Coordination and Common Control Group (CCG) timing analysis.

Example w1-1:

Variable Phase Sequences and Multi-Sequence Analysis

Variable Signal Phasing table in Detailed Output report.
Multi-Sequence Analysis report. Critical Movements display.

Example w1-2:

Signalised Intersection with Two-Segment BUS Lane

Phase Transition, Undetected Movements, Free Queue Distance.
Intersection Summary report including results for
different vehicle Movement Classes and Persons. Design Life.

Example w1-3:

Signalised Intersection Actuated Timing Analysis

Maximum green settings (default, optimum). Critical Movement Analysis method.

Example w1-4:

Bus Priority at a Signalised Intersection

Bus Lane and Bus Phase. Performance results to show benefits to Bus movements.

Example w1-5:

Lane use at a small intersection with short lanes

Lane use with a combination of opposed turn and short lane effects.
Saturation Flows report.

Example w1-6:

Phase with No Green Time

Dummy movement to allocate fixed phase time.

Example w1-7:

Project Summary

Site Category parameter. Annual Sums example. Peak and Off-Peak Performance.

Example w1-8:

Short Lane model

Short lane capacity and performance. Delay upstream of entry to short lane.

Pedestrians at Signals

Crossing options. Pedestrian Crossing Distance and Crossing Speed.
Pedestrian timing parameters. Walk Time Extension. Staged Pedestrian Crossings.
Other pedestrian analysis features. Midblock Signalised Pedestrian Crossings.

Example w1-9:

Pedestrian Actuation and Minor Phase Actuation

Effect of Pedestrian Actuation and Minor Phase Actuation on signal timing results.
Signal timings using Full Crossing and Staged Crossing**.**

Example w1-10

Pedestrian-Only Phase at Signalised Intersections

Diagonal Crossing Movement. Pedestrian Movement Performance and Timing.

Example w1-11:

Saturation Flow Calibration

Key parameters for model calibration. Queue Space. Surveys for base model calibration. Saturation Flow and SCATS MF. Recommended method for calibrating key input parameters. Reasonable ranges of base values for key model parameters.

Example w1-12:

Network Signal Coordination

Time-Distance and Signal Coordination displays.

Site and Network Templates for Signals

Example w1-13:

A Signalised intersection Example

User practice.

Q & A and Discussion of Workshop Effectiveness

Workshop Evaluation Survey

Module 2 - SIDRA for Roundabouts & Sign Control

Example w2-1:

Roundabout with Bus Slip/Bypass Lane

Roundabout data. Lane Control and Lane Type. Movement Class definitions.
Gap Acceptance Capacity calculations and output by Movement Class.
"Include Slip/Bypass Lane in Entry Lane Count" parameter.

Site and Network Templates for Roundabouts & Sign Control

Example w2-2:

Stop-Sign Controlled T-Intersection

Sign-controlled intersection capacity and performance. Priorities dialog.
Effects of Pedestrians and Extra Bunching due to upstream signals. Design Life Analysis.

Example w2-3:

Six-Leg Roundabout

One-way streets, U turns. Specifying lane disciplines for multi-lane roundabouts with diagonal legs.

Example w2-4:

Roundabout Capacity and Demand Flow Calibration

Key parameters for model calibration. Queue Space.
Applying Capacity and Demand Flow calibration method.

Example w2-5:

Freeway Interchange Roundabout Case

Lane Changes and Lane Flows on internal approaches.

Example w2-6:

Roundabout Metering Signals

Nepean Highway - McDonald Street case study.

Example w2-7:

An Unbalanced Roundabout Case

User practice: Interchange roundabout case. Metering signals option.

Example w2-8:

Two-Stage Crossing at Two-Way Sign Control

Full Crossing and Staged Crossing with and without Storage in the Median Area.

Example w2-9:

Midblock Unsignalised Pedestrian Crossing

Gap acceptance analysis. Opposing Pedestrian Factor.

Example w2-10:

Pedestrian Crossings on Roundabout Legs

Signalised and Unsignalised (Zebra) Pedestrian Crossings.
Lane Changes display and report.

Example w2-11:

Double Roundabout Interchange

Use of a Network Template.
Use of Special Movement Classes for lane choice at a roundabout interchange.

Example w2-12:

Two-Way Sign Control Between Two Signals

Extra Bunching. Excess Back of Queue for upstream continuous lanes.
Network Cycle Time and Offset calculations. Model variability results.

Example w2-13:

Output by Movement Class in Route output

Route Travel Performance report.

VOLUMES Utility

New Import Volumes feature.

Example w2-14:

Sign Control with Side Road Priority

User practice: Configure the geometry and specify appropriate gap-acceptance parameters.

Q & A and Discussion of Workshop Effectiveness

Workshop Evaluation Survey

Module 3 - SIDRA for Network Modelling

SIDRA Network Model

Iterative Process. Network Analysis Settings. Paired (Compound) Intersections and Interchanges. Site and Network OD Movements. User Movement Classes.

Network Configuration and Layout Pictures

Network Configuration, aligning sites, selecting multiple sites.
Network Connections. Lane Changes. Travel Time and Travel Distance.
Lane Movements. Rotate Network function.

Example w3-1:

Two-Site Network (Signals and Roundabout)

Configuring a Network and Routes.
Network and Route output reports and displays (Network Summary by MC, Lane Blockage and Capacity Reduction, Midblock Flows, Lane Changes).
Extra Bunching. Network Level of Service and Site Level of Service definitions.

Example w3-2:

Differences in Results Between SIDRA INTERSECTION Versions 9.1 and 9.0

Reasons for differences.

Signal Coordination

Offset definitions. Reference Site and Reference Phase.
Platoon model and platoon dispersion. Stopline travel time.
Network Timing dialog. Vehicle Movement Data dialog, Signals tab.

Example w3-3:

Signal Coordination

A simple Network example to learn about Basics of the Signal Coordination method in SIDRA INTERSECTION.

Example w3-4:

Staggered T Intersections

Use of Special User Movement Classes for lane choice at closely-spaced Sites based on Network OD volumes. Midblock Lane Changes.

Example w3-4 continued:

Network timing analysis

Phase Timings, Signal Offset, Signal Coordination and Critical Movements reports and displays. Time-Distance displays. Network Design Life.

Site and Network Templates

Variability of Network Analysis Results

Example w3-5:

Freeway Diamond Interchange (Signalised)

Modelling of a Signalised Diamond Interchange as a Common Control Group (CCG).
CCG Timing Analysis.

Example w3-6:

Variable Demand Model

A simple Network example to explain various complexities of Variable Demand Modelling, including the effect of capacity constraint in congested networks.

Example w3-7:

Large Network

Network Routes. Network Summary and Network Displays By Routes.
Network Cycle Time and Offset calculations for multiple Routes.

Example w3-8:

Network Configuration

User practice.

Example w3-9:

Alternative Intersections and Interchanges

Diverging Diamond Interchange, Continuous Flow Intersection.

Example w3-10:

Fully-Signalised Roundabout

Modelling a roundabout with signalised approaches and circulating roads as a Network.

Example w3-11:

Output Functions

How to define, import and export User Reports.
How to use the PDF Output function and Customised Output.

Q & A and Discussion of Workshop Effectiveness

Workshop Evaluation Survey