



Transport

**SRMS**

# SCATS Ramp Metering System

The SCATS Ramp Metering System (SRMS) is used to alleviate congestion when entering traffic demand exceeds the available capacity of a motorway.



The SCATS Ramp Metering System (SRMS) controls the amount of traffic entering a motorway using traffic signals located at controlled entry ramps. The system uses traffic flow and occupancy data from detectors to calculate entry flows which will suit prevailing traffic conditions for the motorway. This provides benefits to all traffic by reducing travel times and improving safety.

## Features

The principle features of SRMS are:

- Fully adaptive control of ramp flows using traffic flow and occupancy data from motorway and ramp detectors
- Queue management on controlled entry ramps
- Automatic switching on and switching off of ramp traffic signals and advisory signs
- Integration with nearby traffic signals controlled by SCATS
- User configurable options
- Fixed-time metered flow plans introduced by time-of-day if insufficient detector is available

## Description

The SCATS Ramp Metering System comprises:

- A ramp metering control server which integrates the operation of neighbouring ramp meter signals
- A ramp-meter signal controller at each controlled ramp
- Traffic signals at the controlled entry ramps
- Queue detectors located upstream of the traffic signals on the controlled entry ramps
- Counting and occupancy detectors on the motorway
- Counting detectors located on controlled and uncontrolled entry ramps and on exit ramps

Ramp and motorway detectors may be connected to the ramp-metering controller or a controller dedicated to detectors data collection. Data can also be obtained from an external system such as a motorway management system with a suitable interface.

Adjacent ramps may also be grouped into zones. The operation of the ramps within a zone is integrated rather than each ramp operating independently.

Like the Sydney Coordinated Adaptive Traffic System (SCATS), the operation of SRMS is fully traffic adaptive.

The SRMS software normally runs as a service on a SCATS server. It communicates with SCATS via the SCATS intelligent transport systems (ITS) interface.

A Windows style user interface (SRMS Access) provides monitoring and data input functions.

## Operation

When traffic on the motorway is light, the traffic signals are turned off. Traffic then enters the motorway freely and without the need for control.

When traffic on the motorway is heavy, the signals are automatically switched on to limit the flow entering the motorway.

## How does the signal display work?

- A short green signal allows one or more vehicles per lane to enter the motorway.
- The green is followed by yellow signal then a red signal. The duration of the red signal is varied by the control algorithms to determine the required metered flow rate

SRMS can communicate with SCATS to activate traffic signal control plans that then modify the operation of nearby traffic signals. This occurs when traffic is diverted from a motorway under an incident management strategy and may also be used to manage queuing at ramp terminal signals.

## Benefits

SRMS provides the following benefits:

- Reduced congestion on the motorway
- Easier and safer merging
- Fewer stops and starts
- Reduced travel times
- Improved road safety
- Integration into the arterial road network for SCATS users.

Contact Details:

For more information about SRMS please visit [www.scats.com.au](http://www.scats.com.au) or

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