NSW GOVERNMENT | Transport

SCATS

Sydney Coordinated Adaptive Traffic System

Sydney Coordinated Adaptive Traffic System (SCATS) is the leading traffic management system used to monitor and control thousands of traffic signals around the world.

Anzac Parade and Green Park Road, Moore Park

Overview
The Sydney Coordinated Adaptive Traffic System (SCATS)

SCATS is a complete system of hardware, software and control philosophy. It operates in real-time, adjusting signal timings throughout the system in response to variation in traffic demand and system capacity.

It measures traffic volumes and flows at intersections mainly using inductive loop detectors buried in the road surface. This data is then used to automatically adapt operation of traffic signals on an area-wide basis.

SCATS can run without any manual intervention, it is self calibrating and requires no on-going traffic surveys and manual plan generation, therefore reducing operational costs.

On average SCAT's has reduced delays by 20%, reduced stops by 40%, reduced fuel consumption by 12% and emissions by 7%.

Central Management

The SCATS Central Manager provides a global view of system operation. It can manage up to 64 SCATS regions, each of which can control up to 250 traffic signal sites.

The SCATS database contains common information that can be used by any SCATS application and can be viewed by any SCATS workstation. This includes graphics, data, site details, various traffic management plans, schedules, action lists and alarms.

Communications

SCATS regions can connect to traffic signal sites via permanently connected serial links (point-to-point or multi-drop), dial-up connections (dial-in or dial-out) or TCP/IP.

Each region allows up to 30 simultaneous workstation connections and each workstation can monitor up to 10 sites at a time.

Traffic Management

Each traffic signal site can be run in isolation or can be coordinated with other sites using one of the several operating models, including fixed-time and adaptive modes.

The adaptive modes allow the cycle times, phase splits and offsets to be determined dynamically to suit prevailing traffic conditions. Adaptive operation is self-calibrating.

Manual Overrides

SCATS supports manual overrides including trims, locks and dwells. It also has support for green light runs and incident response plans. Plan changes can be done manually or scheduled. The scheduler includes public holiday support.

SCATS has a comprehensive set of user-selectable routines to allow real-time modification of normal operation based on the detection of events or unusual conditions. SCATS maintains an audit trail of all operator data changes, plan changes and any manual intervention.

Loop occupancy

In-road sensors

SCATS controller

Space between vehicles
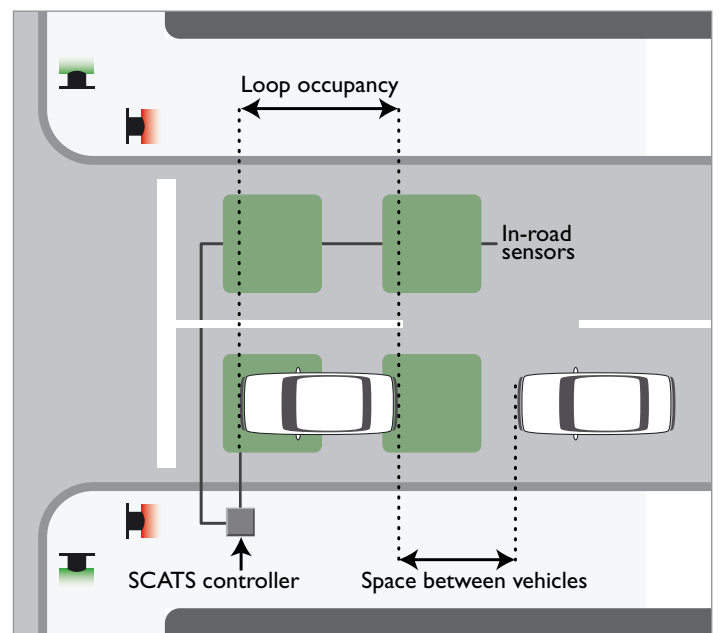
SCATS Graphic

Intersection of King Street and Enmore Road

The RTA is committed to improving the road network by maximising efficiency and reducing congestion through investment and innovation; maintaining road infrastructure by improving the quality of road surfaces; and improving road safety by reducing fatalities and the number of road crashes. The SCATS system is a primary contributor to achieving this commitment.

Monitoring

SCATS provides extensive facilities for monitoring traffic, traffic signal operation, communications, traffic signal hardware and alarms. It also has extensive error detection and reporting.

Data Collection

SCATS has automated collection of operational and performance data. Traffic counts are collected on a lane-by-lane basis wherever appropriate detectors are installed. Any collected data can be sent to the SCAT Central Manager for backup.

Intelligent transport system support

SCATS has an intelligent transport systems (ITS) interface that can support up to 100 connections for the exchange of data with third-party ITS applications.

This can be used for:

- Data collection and analysis
- Traffic control
- Public transport priority
- Dynamically updated map-based displays
- Traffic modelling and simulation

SCATS