

SCOOT



Adaptive Traffic Control System

SCOOT (Split Cycle Offset Optimisation Technique) is a tool for managing and controlling traffic signals in an urban area.

With the impact on health and the economic costs of delays, local authorities continually strive to maximise efficiency of the highway networks and minimise disruptions caused by incidents and events.

What is SCOOT?

SCOOT coordinates the operation of all the traffic signals in an area to provide good progression of vehicles through a network. It responds intelligently and continuously as traffic flows change and fluctuate throughout the day. SCOOT removes the dependence of less sophisticated systems based on signal plans which can be expensive to update and maintain.

There are a number of key benefits from the installation of an effective SCOOT Urban Traffic Control System:



- Customised congestion management
- Typical delay reductions of 15%
- Maximised network efficiency
- Flexible communications architecture
- Public transport priority
- Vehicle emissions estimation
- Comprehensive traffic information
- Pedestrian priority

How SCOOT works

Information on the physical layout of the road network and how traffic signals control the individual traffic streams are stored in the SCOOT database. SCOOT detects vehicles at different locations around each controlled intersection. It models the progression of the traffic from the detectors through the intersection whilst taking due account of the signal state and any consequent queues. The information from the model is used to optimise the signals to minimise overall network delay.



SCOOT-based UTC System

SCOOT systems are ideally suited to meet the requirements of local transport policy through comprehensive traffic management. At its most basic, a server hosting the SCOOT algorithm is integrated with the organisation's infrastructure.

SCOOT detectors are positioned where they detect queues that are in danger of blocking upstream junctions and causing congestion to spread throughout the network. Within SCOOT, the Traffic Manager is able to prioritise where such problems should be minimised and SCOOT then automatically adjusts timings to manage and minimise congestion.

Access may also extend to viewing and controlling CCTV to compare on-street conditions with the SCOOT model. SCOOT can be integrated into a fault-monitoring system to provide integral fault management and, if required, automatic fault reporting direct to the maintenance contractor.



Traffic Management

There are many tools available within SCOOT to manage traffic and meet local policy objectives such as favouring particular routes or movements, minimising network delay, discouraging and delaying "Rat Run" opportunities and gating traffic in certain areas of the city. Because of its highly-efficient control and modelling of current conditions, SCOOT has a great deal more scope to manage traffic than less efficient systems.

Where is SCOOT used?

SCOOT is working effectively under a wide range of conditions in places as diverse as Beijing, Delhi and São Paulo. SCOOT is very widely deployed in London where SCOOT installations now total over 4,500 across its 6,000 signalised junctions with the numbers increasing year-by-year, making SCOOT potentially the largest single deployment of Adaptive Traffic Control Systems in the world.

The London Olympic Games in 2012 offered the opportunity for further development within SCOOT culminating in the highly-successful SCOOT Gold (Games Operation-Led-Development) which continues to support London's ongoing corridor management program and was also essential to the management of signal timings on the Olympic Route Network (ORN) during the games.

Key to the ORN implementation was the retiming of 1300 traffic signals which was predominately managed through London's SCOOT system.