


MATC INTELLIGENT TRAFFIC SYSTEM (MITS)

Advanced Traffic Control And Coordination Of Widely Distributed / Urban Traffic Controllers



PPK Technology offers a unique and advanced traffic management solution known as MITS. The MATC 4000 controller communicates with MITS in order to provide status and traffic information to the control center. The benefits of MITS include higher reliability of traffic equipment, better maintenance service levels, intelligent and automatic control center initiated adjustments of timing and phasing parameters based on real time traffic demand and allows the analyses of traffic information and collected data to be conducted for making informed decisions. All of this result in improved service for public infrastructure, higher vehicle throughput and road user satisfaction, reduced travel delays, pollution and unwanted incidents.

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• Traffic Control Center:

The MITS is installed at a traffic control center which acts as the hub which communicates with the individual traffic controllers on site. Communication to the traffic controllers can be via GPRS/EDGE, 3G/4G, Wifi, PSTN, Leased Line or Fiber optic mediums. The control center generally consists of:

- * MITS Application Server
- * MITS Database Server
- * A rack, UPS, PSTN / GPRS or EDGE or 3G/4G modems / Media converters (Fiber/leased line/etc)
- * Video cards and switching equipment
- * Display systems (video walls, LED televisions)

• Remote Maintenance and Alarm Monitoring:

The MITS software provides the ability to remotely collect data from the traffic controllers regarding the operational status and existing or historical faults of the system. Without going to site, the traffic management officer (TMO) is able to know the exact status of the traffic equipment.

Parameters monitored include power failures, lamp failures, lamp conflict, loop failure, communication failures, junction over-capacity alarms, greenwave link failures and countdown failures. The faults are sent to the MITS which allows the TMO to delegate maintenance tasks to address these problems. Upon rectification, the TMO can acknowledge the alarms and these activities are fully tracked and can be retrieved in the form of a report. Report formats are extremely versatile.

MITS also allows the TMO to conduct remote traffic controller shutdowns / amber flash and police control (to override local controller operation) can be done from the MITS application. Emergency/VVIP/public transport prioritisation and pre-emption can also be configured from the MITS console.

• Real Time Data Collection and Analysis:

MITS is designed to detect changes in the traffic flow, to analyse the data and to recommend the optimized flow timings. The software logs the number of vehicles per phase and accordingly provides a vehicle throughput analysis.

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The TMO is able to determine the number of vehicles passing through the junction in a given time window with the existing parameters. Similarly, upon changing controller time settings, the TMO is able to conduct before and after analysis to obtain a comparison of the revised parameter effectiveness.

• Traffic Data Reporting and Automatic Adjustments:

In addition to data collection and analysis, MITS is released with a capability for time setting recommendations.

These time settings are provided based on two modes:

(i) Permission Based (PB) and (ii) Automatic Implementation (AI).

In the PB mode, MITS collects green time and traffic data and accordingly recommends to the TMO if revised settings are required such as a change in VA time settings or revised Multiplan recommendations.

In the AI mode however, such changes are implemented automatically without the approval of the TMO so that the traffic controllers can operate based on the most recent trends using timing parameters generated by MITS. These time parameters also include greenwave linked junction controllers (using wireless RF module or GPS synchronisation).

The MITS can also be used to feed traffic data to a traffic information server which is used to collect data regarding traffic conditions around an urban area. This information is useful to road users who need to plan their travel routes. The system can also be integrated with video CCTV monitoring and recording system for traffic monitoring and incident detection.

• Key Features:

- * Remote maintenance capability
- * Data collection and analysis
- * Traffic data reporting and auto adjustment
- * Green wave parameter configuration
- * Remote police control / priority / pre-emption capability
- * Can be integrated with video CCTV and traffic information portals

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• Significant benefits

- * Efficient maintenance (reduced traffic system downtime) - positive economic contribution
- * Reduce accidents, both vehicular and pedestrian
- * Reduce fuel consumption and pollution
- * Reduce delay and number of stops
- * Increase capacity and reduce journey time
- * Provide bus and emergency vehicle priority / pre-emption measures

• MITS Interface Features:

Item	Specifications
Security	User login and password
Architecture	PC-based servers and client workstations connected via a local area network (LAN)
Multiple controller access	MITS can access and display multiple junction controllers at one time *
Multiple user access	Multiple users with MITS can access a junction controller at one time *
Communication to controller	Supported via GPRS/EDGE, 3G/4G, PSTN modem, Wifi, Fiber optic or Leased Line
Lingual	Bi-language. Application can be in Bahasa Malaysia or English
Junction Maps	Uses Google Maps with detailed intersection display
Urban Maps	Can show entire area containing traffic controllers connected to MITS Can be panned and zoomed to focus level of detail and segmented into areas and sub-areas
Active phase timer and vehicle detection indication	Shows active phase and change of colour upon loop activation
Greenwave link modes	Shows traffic controllers under link operation
Countdowns	Shows real time display of digital countdown

* with the exception of one to one communication i.e. PSTN dial up

PPK Technology products are available nationwide in Malaysia or overseas through selected agents. Products can be supplied, installed, configured and tested by PPK Technology or an approved contractor. For a complete list of products and services available and technical support staff, contact our office or visit our website.

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