

EMAS II

Second Phase of EMAS launched

Accidents and other incidents on the roads can often lead to serious traffic congestion. To minimise the effects of such incidents on traffic flow, the LTA is making use of a specialised monitoring system to detect and respond to road incidents and conditions. This system is the Expressway Monitoring and Advisory System (EMAS).

The first EMAS was implemented along the Central Expressway (CTE) on 21 March 1998. The second phase of EMAS (EMAS 2) expands the system coverage geographically to include the CTE tunnel, most of the Ayer Rajah Expressway (AYE), East Coast Parkway (ECP) and Pan-Island Expressway (PIE). ST Elect was awarded this contract to implement EMAS 2 at the end of 1998, after having completed the first phase. The second phase is scheduled for completion in April 2000. In the near future, the system will be further expanded to include other expressways.

EMAS uses a series of high-technology cameras with sophisticated image processing techniques to detect accidents and other traffic anomalies that may affect traffic flow. These road conditions can be remotely monitored from the Control Centre using surveillance cameras in order for operators to view any affected location of interest.

Once an incident is detected, staff at the Control Centre will take action to alert the appropriate agencies to handle the situation, e.g. the Traffic Police, ambulance, fire stations and/or towing services, etc. Warning and/or information messages will be displayed at strategically located variable message signboards along the expressways. Variable message signs at arterial roads leading into the expressways will display the travel



▶ An Emas Gantry

times to various destinations in order to help motorists plan their route and avoid congested areas. TV and radio stations will also be alerted to provide advance warning of the incident to motorists.

EMAS in general consists of the following sub-systems:

- *Central computer system*
- *Detection system*
- *Surveillance system*
- *Information and traffic control*
- *Emergency telephone system*

The detection system provides traffic data and alerts to the central computer system for processing. The detection system uses image processing techniques to process live video images from cameras installed at regular intervals along the expressway to derive raw traffic data like speed, occupancy, vehicle length, etc. These information will be used by the central computer to determine the prevailing traffic levels, predict travel times to specific destinations, etc. This can then be disseminated to motorists through the variable message signs along the expressways.

The surveillance system comprises of a series of cameras located at suitable vantage points in order to give the operators good views of the expressways.

The information and traffic control system consists of variable message signs that are designed to inform the motorist on the expressway of traffic conditions and incidents. Those on the arterial roads leading into the expressways will display travel time information pertaining to certain destinations, thereby informing motorists of the existing traffic level. It will also be capable of informing motorists of incident locations, thereby helping motorists plan the most effective journey.

The emergency telephone system is provided at regular intervals along the expressways to ensure that motorists in distress will be able to call for help where necessary.

EMAS has been designed to provide relevant information to help motorists on the roads. This is part and parcel of providing better urban transportation infrastructure to the modern-day commuter.

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