

Intelligent Transportation Systems for Dubai “ITS Dubai”

Dubai Municipality has started the implementation phase for the project ITS Dubai “Intelligent Transportation Systems for Dubai”, which is considered to be the first comprehensive ITS project in the Middle East, and one of the most sophisticated ITS projects currently being implemented in the world. To shed more lights on this important project we have conducted the following interview with Engineer Matar El Tayer, Assistant Director General for Roads and General Projects in Dubai Municipality.

What is ITS Dubai Project ?

Dubai Population has grown from approximately 700,000 in 1995 to approximately 1.3 Million in 2004. Doubling the population during only 1 decade resembles one of the highest population growth rates in the world. This growth is a direct result of the phenomenal economical growth that attracted investors and businesses from allover the world. Unfortunately there is a price to pay for successes in all aspects of life. When it comes to transportation the price to pay is usually in the form of increased congestion.

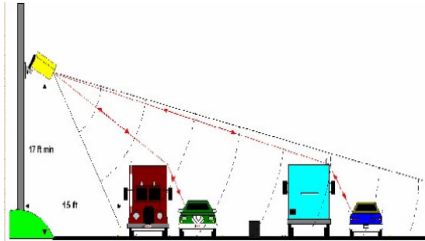
Dubai Municipality works aggressively to reduce traffic congestion and to improve safety, several integrated approaches are being implemented to achieve this goal, such as constructing new roads and interchanges, promoting public transportation, and enhancing the ways we manage our roadway network. ITS Dubai is a sophisticated project that will enable Dubai Municipality to manage its roadway network effectively by knowing what’s happening in the entire roadway network (Detection), making sure that we can verify accident locations (Verification), and being able to respond to accident and incidents (Responding).

For how long was DM working on this project?

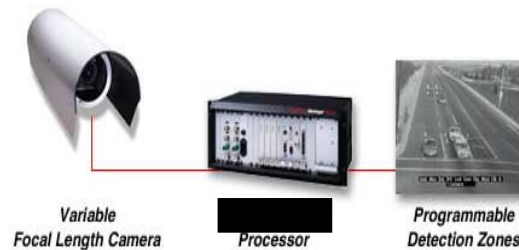
DM has been working on this project since Mid 2002, since then the project has gone through the following phases: Planning, Study, Preliminary Design, Final Design and currently we are during the Tendering Stage.

What are the major components of the Project?

- DM will automatically know about the majority of incidents (specially on Major Highways) by Collection of real-time traffic flow information via 63 freeway monitoring stations. point detection using radar sensors and wide-area detection using video image processing will be installed - particularly along bridges, within tunnels, and at key interchanges. Stations will be non-pavement intrusive, for easy maintenance and relocation if necessary.



- DM will verify that incidents have actually happened by utilizing 20 new colour digital cameras, using the latest processing technology, these new cameras will be added to the existing 24.



- Once incident is detected and verified the new software will search through the response planning bank and will recommend to the operator the best way to deal with the incident. DM will also re build the existing Traffic Control Center to a State of Art Comprehensive traffic Management Center.



After successfully identifying and verifying an incident what could the system do to reduce congestion and enhance safety?

The System will conduct hundreds of complicated tasks; the following are samples of tasks to be conducted:

- Provide advice to motorists who are not yet caught in the traffic jam to change their routes.
- Diverting Traffic safely away from blocked lanes due to accidents
- Automatically reduce speed limit during incidents or congestions.
- Implementing pre approved and tested plans jointly with Police Department and Civil Defense to guarantee reaching to accident locations and then to hospitals as soon as possible.
- Supporting major Traffic signals and Civil Defense Vehicles with signal priority equipment to guarantee reaching injured drivers and passengers as soon as possible.
- Reduce congestion during special events by automatically activating stored Traffic Management Plans prepared specifically for those special events.

How would the new ITS System inform motorists regarding Traffic congestions and incidents:

Such information will be provided to the drivers by the following technologies:

- 30 LED-based Dynamic Message Signs “DMS” will be located upstream of decision points. State-of-the-art graphical information with concise English and Arabic text will be utilized.



- Nearly 300 real time lane use control signals and speed control signals will be installed along critical segments and bridges and tunnel approaches.



- Real-time wireless messaging, involving both 'pushing' data through SMS alerts (subscribers receive accident and major congestion messages) and the ability to 'pull' data through WAP services (providing travel time and congestion information via text menus and displays). Services will be provided to compatible mobile phones in partnership with Etisalat.



- Internet web pages, with map-based information showing travel times and congestion information along with incident locations and lane closures, plus video images from DM cameras.
- Dynamic navigation for those drivers who will purchase the in vehicle equipment. It should be noted that DM has finished preparing the navigation CD and the product will be available in the market within few months.



- Traveller information kiosks using an interface similar to the web page but with touch-screen navigation, located in shopping malls and other public areas.



What kind of success do you expect from this project?

As I mentioned previously, this project is one component of a comprehensive set of solutions designed to relief congestion and enhance safety, the traffic simulation studies has indicated a 15% reduction of traffic accidents and good reduction in Traffic Congestion as a result of implementing the ITS project.

When do you expect the users to start benefiting from this project?

The project duration is 18 months, and I expect the users to start utilizing the system by the first quarter of the year 2006.

Is this project a stand-alone project or we might see additional ITS projects?

DM has decided to depend on the latest available traffic engineering technologies in all its future projects, in fact an ITS unit was established within the Traffic Engineering and Technologies section and all new projects are being reviewed by that unit to integrate new projects with the ITS backbone established through the original ITS project. For example designs are currently being prepared to install ITS components for the new fourth crossing project.