



AEM's AVL – 500 Vehicle Tracking Device enables Tracking and Geo-Fencing of 1800 Commonwealth Games Vehicles. (CWG 2010)

AEM is the leading provider of indigenously designed & built technology solutions in India. We have addressed the most challenging real-time communication & collaboration needs of defense and industrial market customers: securely, cost effectively.

The Scope

TATA Motors, Pune had provided approx 2300 passenger cars to be used during the Common Wealth Games 2010. These cars were used to transport Players, CWG Referees and other officials from one venue to another, across 250 pre-defined routes and destinations.

The fleet of 2300 passenger cars comprised of 1600 Indigo cars, 400 Sumo Grande cars and 300 Tata Safari cars. 2500 drivers were hired to provide round the clock transportation service especially for this event.

Five parking stations in New Delhi at Vinay Marg, Ravinder Rangshala, Dayal Singh College, Army Public School at Delhi Cantt, and at the main Organizing Committee building were created to manage the entire transportation.

The Client

Tata Motors Limited is India's largest automobile company, with consolidated revenues of Rs. 92,519 Crores (USD 20 billion) in 2009-10. It is the leader in commercial vehicles in each segment, and among the top three in passenger vehicles with winning products in the compact, midsize car and utility vehicle segments. The company is the world's fourth largest truck manufacturer, and the world's second largest bus manufacturer.



The Challenges

- The timing of CWG 2010 in India was such that Delhi witnessed the heaviest rainfall in last 30 years, making the working environment for AEM team more challenging. Delhi also witnessed the spread of Dengue fever during the month of CWG event.
- TATA motors had mandated that the internal wiring of the assigned vehicles should not be tampered with.
- Internal Communication and non-availability of GPRS connectivity between the parking sites were a hindrance.
- Since 1600 VTS units were to be fitted at a short notice, AEM technical team was expected to work round the clock and there were very limited means of lighting available at the work sites.
- The parking areas, being vacant lands, were heavily infested with Snakes, and other harmful insects, making the night working environment very dangerous.
- Lack of communication between various departments involved with CWG was a hindrance in getting project updates.
- AEM was also expected to provide basic training to every batch of drivers at all the five parking sites, at a short notice.

Our Approach

- Since TATA motors under the contract had mandated that non-tampering of internal wiring of the vehicles, special harnesses were created to ensure non-cutting or temping of any internal wiring of the vehicles.
- Four teams of 3 Engineers and 4 Technicians each were created who worked in 3 shifts to ensure timely fitment of 1600 VTS devices at short notice.
- Two teams with support of the main service provider of VTS tracking experts were created to man and manage the control room at the OC building round the clock.
- The whole of production department of AEM was available on standby support for any short notice contingency.
- One Special team from the R&D department of AEM was available on standby for ensure all possible technical support.
- A round the clock control room at the Service Provider's end was also created to ensure prompt tracking services.
- A standby stock of approx 300 units was maintained at the site to ensure timely replacement of faulty/defective/tampered VTS units.
- A technical team was dedicated to provide basic training to all drivers at all the five parking sites.
- Parallel control centers were created at Vinay Marg and Ravinder Rangshala.

The Technology

- Rabbit – 2000 micro controller architecture
- GSM / GPRS MODEM: Tri Band (900,1800,1900 MHz)
GPRS: Type B, Multi-slot
Class 10 SMS
- Up to 6 Digital inputs & 4 Digital outputs
- Two serial port (RS232) interface (Config port, Aux. port for peripherals)
- 2 analog input interface
- Handset for 2 way voice communication
- Geo-Fencing
- Two way online TCP-IP connection
- GPS L1 frequency 1575.42 MHZ, 50 channels with high sensitivity & accuracy

The Outcome

- AEM achieved 100% device installations at a short notice.
- Several cases of misuse of CWG cars were highlighted (e.g. One particular vehicle was being taken to Meerut on a personal trip by the driver and using the Geo fencing was highlighted within 20 minutes of breach of geo fence, another case one vehicle was taken to areas beyond Gurgaon on a personal trip and was highlighted using our tracking service).
- All 1600 vehicles were successfully tracked around the clock and all required reports were timely submitted to the concerned departments.
- None of the vehicles reported any tampering or damage or non-functioning because of our VTS unit.

The entire CWG vehicle monitoring project including installation 1800 VTS units as well as training of 2500 drivers was completed successfully in record time of 9 days.

AEM provided full support and round-the-clock tracking services & submitted all the required reports to all CWG and Tata Power departments through the entire duration of the games.

APPLIED ELECTRO MAGNETICS

applying minds to technology...

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