Nomination for National Awards for e-Governance

Mysore City Traffic Police

GOVERNMENT OF KARNATAKA
OFFICE OF THE COMMISSIONER OF POLICE
MYSORE CITY POLICE

TRAFFIC ENFORCEMENT
THROUGH INFORMATION TECHNOLOGY

"Automated Traffic Challaning System"

Mysore City Police

Paper submission on project

"Automated Traffic Challaning System"

NATIONAL AWARDS FOR E-GOVERNANCE

1. Coverage – Geographical and Demographic :-

Mysore also known as Heritage City is the second largest city in the state of Karnataka. Having a population of about 12 lakhs and vehicle population of more than 6.5 lakhs, it has come a long a way from being known as the Laid-back City to one the of the major IT hubs of Karnataka.

The growth of information technology industry in the first decade of 21st century has resulted in the city emerging as the second largest software exporter in Karnataka, next to Bangalore. The spurge in the economic growth lead by the growth in infrastructure, increase in the demographics and real estate boom has resulted in increased vehicle ownership.

2. Situation before the Initiative :-

Traffic management problems which are assuming alarming proportions in the cities of the industrially advanced countries are being experienced in the Indian cities too. They have reached a critical point strangulating the cities. Due to increased congestion and huge traffic jams, traffic flow is affected leading to increase in journey time and reduced average speed. From the point of view of **'Road Safety',** the conditions in the cities are far from satisfactory.   The situation has arisen largely owing to an inadequate appreciation of the nature and type of a whole range of problems. Some of the significant problems leading to traffic congestion in Indian cities are:-

i)   Rising demand for travel due to increase in population and other activities,

ii) Concentration of land use in certain areas such as central business districts and office areas,

iii) Mixed nature of traffic,

iv) Inadequate facilities segregating slow traffic,

v) Insufficient road space,

vi) Inadequate width of pedestrian sidewalks and their encroachment by hawkers,

vii) Inadequate facilities to meet the heavy demand for parking requirements,

viii) Lack of road sense and indiscipline on the part of road users,

ix) Ineffective enforcement measures,

x) Inadequate funds to meet the increasing demand for essential improvements,

xi) Non existence of a specific organization with specialized personnel to deal with traffic problems.

The above problems have largely contributed to huge traffic congestion in almost all Indian cities. Though majority of traffic problems is due to faulty urban planning by civic agencies, traffic police is most often blamed for chaotic traffic situation.

3. Scope of Services/ Activities covered :-

The Spectacular growth of vehicular traffic in India during last 2 decades has resulted in traffic congestion, pollution, longer journey time and increased road accidents. This is due to rapid urbanization, unprecedented growth of industry, Commerce and employment in urban areas especially cities. Thousands of vehicles have been added to roads every day without commensurate infrastructure development. Today in Indian Metros like New Delhi, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad have between them nearly 20 million vehicles. The resulted scenario is that, there are too many vehicles occupying roads. Therefore, the greatest challenge for City Police Managers is Traffic Management on par with maintenance of Law & order and prevention of crime.

Apart from enormous growth of vehicles, poor traffic enforcement is one of the causes for traffic congestion and poor discipline on roads. Road users do

not follow traffic rules as violation is a rule not an exception. The old manual challaning system prevalent in most of the cities is not effective, as deterrence level is minimum. In **manual challaning** system, there is no **mechanism to punish repeated offenders**. The system is also not transparent as manual booking system breeds corruption and harassment.

In order to bring transparency in challaning traffic offenders, Mysore City Traffic Police started the Enforcement Automation Centre in 14th May 2013. In this system, violation of traffic rules by road users is captured on cameras and computerized Challans are sent to the owners of vehicles to pay up traffic fines.

This system has proved to be effective for enforcing traffic rules. This system has the advantage of using technology with least human intervention. This system of traffic enforcement is very effective and has gained public acceptance and support.

In the days to come, it serves as an effective tool in reducing Police-public interface in traffic enforcement.

4. Strategy Adopted :-

i. The details of base line study done.

Management of this spiraling traffic and ensuring their smooth flow is becoming a huge task and using information technology to enhance the current traffic management practices becomes the need of the hour and in order to bring transparency in challaning traffic offenders, a new system **"Automated Traffic Challaning System"** is envisaged by Mysore City Police**.**

Automated Traffic Challaning System

The Automated Traffic Challaning System is one of the most effective tools for enforcement of traffic rules on Indian roads in a transparent manner. This system has the advantage of using information technology with least human intervention. The Automated Traffic Challaning System for enforcement of traffic rules is prevalent in Western Countries. The Automated Traffic Challaning System has the following **advantages** when compared with the manual Traffic Challaning System

i)   It helps in bringing more safety on roads.

ii)   Reduction of rash and negligent driving.

iii)   Avoids conflicts between Police and Public.

iv)   Increases awareness of traffic rules and regulations.

v)   Reduction in the processing time of violation and disposal of the same.

vi)   Transparency in enforcement of traffic laws and rules.

vii)   Used as most effective tool of e-governance to manage, monitor and administration

viii)   To give more thrust for the traffic police personnel who monitor the traffic on the field by giving them wider opportunity to penalize the erring motorists.

ix)   For wider use of punitive actions such as suspension of Driving License, Registration Certificate and Permits as provided in the IMV Act.

x)   Facilitate in identifying frequent violators and initiate appropriate correctible action.

xi)   To have complete data of motor vehicle owners address, license holders particulars and violation particulars.
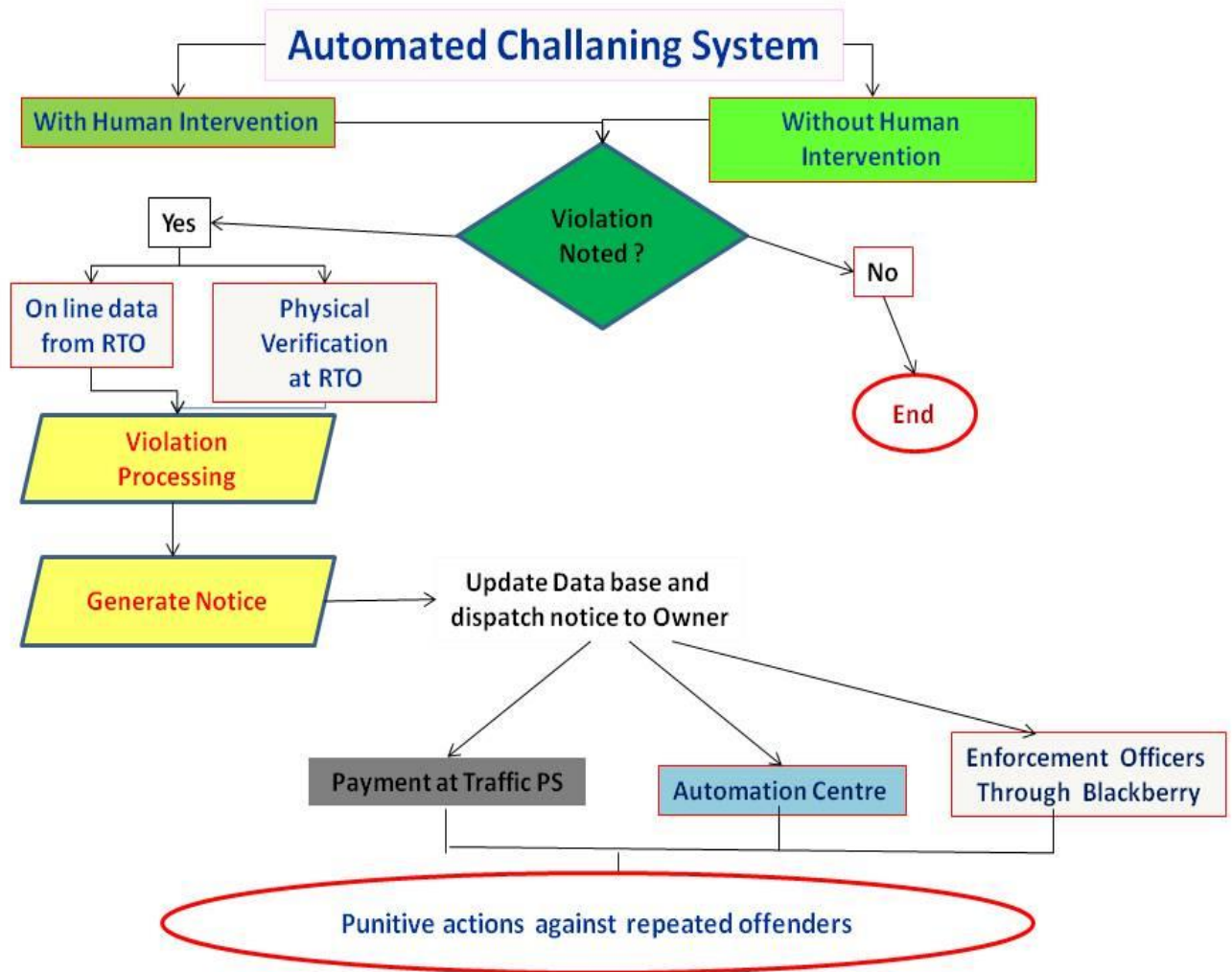
ii. Problems Identified :

The Traffic Police enforcement systems have been plagued by number of issues and the existing Traffic Enforcement System has the following short comings;

I. Existing system of manual booking of traffic violation cases consumes lot of time and energy.

II. As enormous time is required for manual challaning the traffic violators, Traffic Police officers do not give adequate time for traffic regulation and clearing traffic jams.

III. Manual system of booking of traffic violation case is not transparent. It facilitates corruptive practices.

IV. In manual system, there is no record of previous traffic violations by the drivers. Due to this, repeat offenders escape higher penalties.

V. There is a scope for pilferage and misappropriation of fine amount collected by Traffic Police. Many a times unscrupulous police officers use duplicate receipt books.

Such issues resulted in revenue pilferage and greater disorder and disarray in traffic management. The manual process of fining and collection, employed, lacked oversight of senior officers which allowed the scope for unaccountable behavior. Often major violators would go scot free by manipulating the law enforcement personnel which not only caused loss to exchequer but more importantly gave enhanced confidence to the violators thus adding to the woes of the traffic managers. The fine collection from traffic enforcement hovered around few lakhs, while violations on street kept on increasing.

iii. Roll out / Implementation Model

In order to implement Automated Traffic Challaning System in Mysore city with a population of over 12 lakhs and vehicular population of 6.5 lakhs, following deliverables are used:-

i) Database server and their connectivity with Transport Department server

ii) 30 Nos. hand-held enforcement devices along with Bluetooth enabled printers

iii) Back-end connectivity between hand held devices and database server through a service provider.

iv) 42 Nos. surveillance cameras with connectivity to Traffic Management Center

v)   6 Nos. Enforcement cameras with connectivity to Traffic Management Center

vi) 100 Nos. digital cameras to the point constables to record traffic violations at junctions.

vii) Printed blank challans for generating notices under Section 133 of IMV Act.

viii) 25 Nos. Traffic Police Officers of and above the rank of Assistant Sub Inspectors of Police.

ix) 250 Nos. Head constables / Police constables

x)   Computer trained Police constables to man Traffic Automation Center for generating FTVR notice.

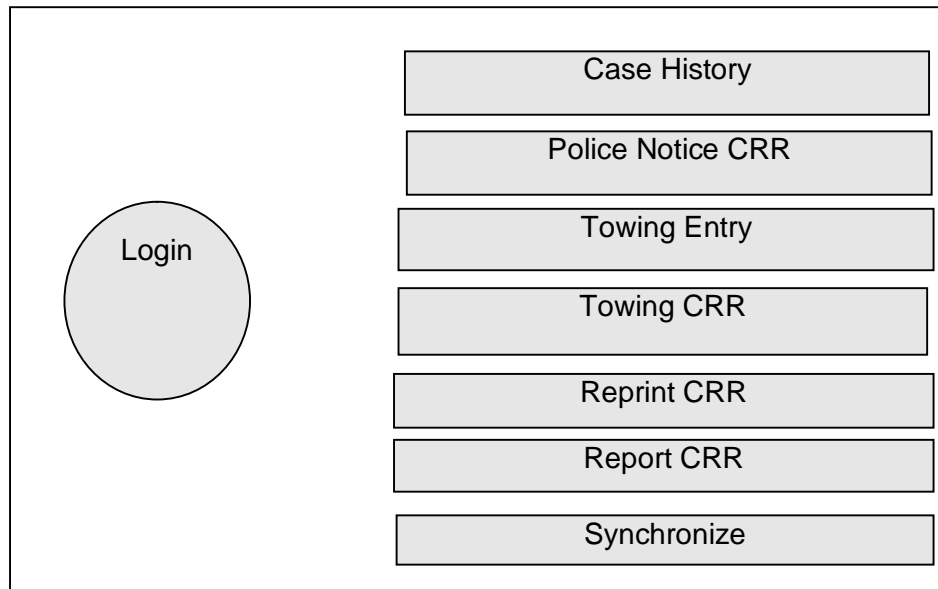## iv. Communication and dissemination strategy and approach used :

- To improve the quality of traffic law enforcement at all levels with the aid of best ICT tools and available manpower.

- The system of Automated Traffic Challaning System depends largely on the availability of data of all vehicles registered in the concerned state. It means, information regarding ownership data of vehicles registered in the State should be made available to traffic police for sending challans for traffic violations.

- There shall be a mechanism for automatic transfer of ownership information from Transport Department to Traffic Police. In case of change of ownership, the transfer details should be automatically gets updated in traffic police database, on a real-time basis.

- It is assumed that the wireless or wired connectivity is available on mobile vehicles for data as well as voice in the area where project will be implemented.

- Initially the operation and use of hand held and related software should be imparted to the cities where this project is desired to be implemented.

- On completion of projects the States will be willing to take upon themselves to continue the work and take the project objective down to all police station levels

- All the States will employ software professionals or outsource the expertise required initially till the department officers sufficiently assimilate required skills in maintaining and managing the system themselves.

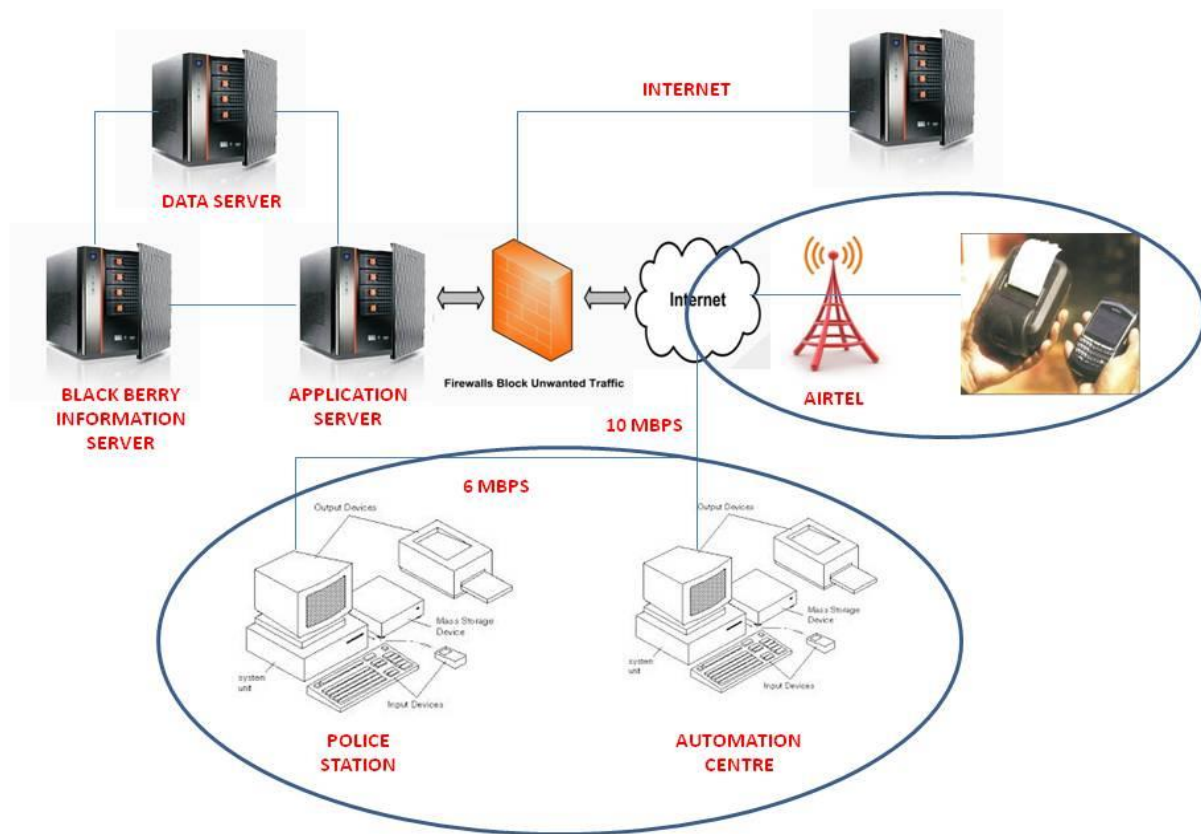- Project also envisages setting up of TRAFFIC MANAGEMENT CENTRE at Mysore City.

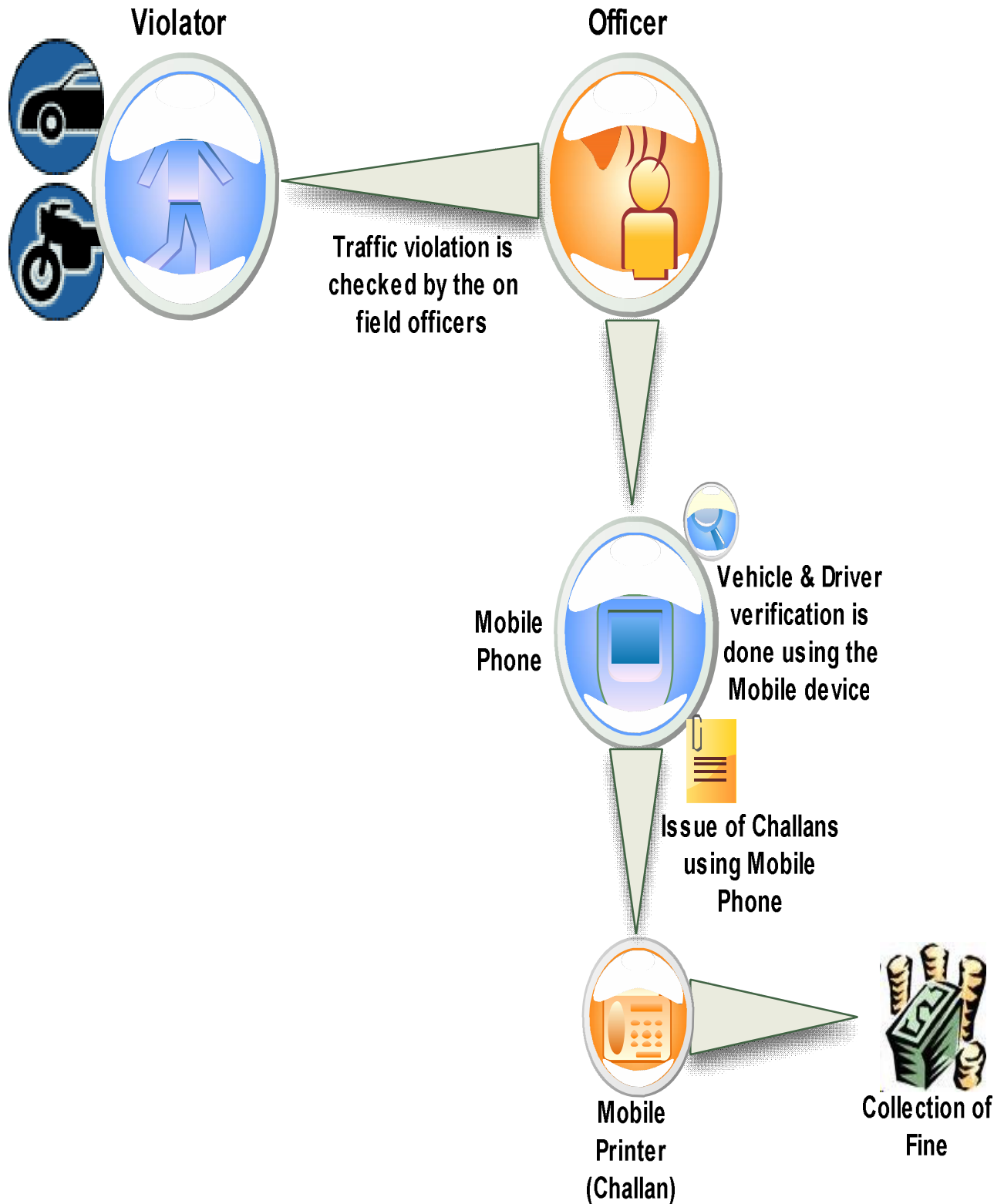## 5. Technology platform used :-

i. Description :-

- The solution enables traffic field personnel to access the backend infrastructure through a mobile handheld with ease in a high secured manner

- The handheld application will have the capability to print data from the screen on a Bluetooth printer

- Push technology for data transfer. ±Always ON featureq

- The handheld devices with application will be using mobile packet data network (GPRS/EDGE/3G/4G) to reach the servers placed at Automation Center

- The application sitting on the handheld enables the officers to collect fines on the spot.

	Case History
	Police Notice CRR
Login	Towing Entry
	Towing CRR
	Reprint CRR
	Report CRR
	Synchronize

Traffic Enforcement System Architecture

Process flow Diagram

Violator

Officer

Traffic violation is
checked by the on
field officers

Mobile
Phone

Vehicle & Driver
verification is
done using the
Mobile device

Issue of Challans
using Mobile
Phone

Mobile
Printer
(Challan)

Collection of
Fine

ii. Interoperability:-

Exchange of FTVR data from all Traffic Police stations to Automation centre is connected through internet on 6MBPS FTH line. Owner of the vehicle data is retrieved from RTO Data base and it is connected with Automation centre through internet and violation notices are generated at the automation centre in Mysore.

Iii. Security concerns:-

Norton Antivirus is used to prevent viruses and to safeguard from and firewalls to prevent from hackers.

iv. Any issues with the technology used :-

No issues.

v. Service level agreements:

NA

6. Demonstrate innovative use of ICT for development :-

The Automation center depends on the computerized process of capturing the violations through various inputs such as, processing the inputs reported from the police personnel of the Police Station, complaints by the public (E-mail, Facebook, Public Eye), Field Traffic Violations noted by the Traffic Police Personnel on the field etc. All these inputs are fed into a centralized

Mysore City Traffic Police
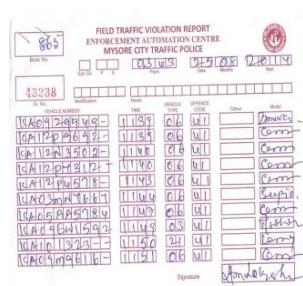
Database server accessed through the workstation by the personnel at the automation center.

The data so collected and organized properly is made available to all Police Stations over internet and can also be accessed by hand held enforcement devices provided to the personnel on the field. This facilitates the general public to go to the nearest police station or to the Traffic personnel with hand held enforcement device to pay fine and compound the offences attributing to the "Anywhere Anytime" fine collection and disposal mechanism.

Basically this systems works by the inputs given by

1) Enforcement/ Red Speed Camera

2) Surveillance camera

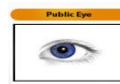3) Field Traffic violation reports through digital Cameras

4) Public complaints through

a) e-mail   b) Face book   c) Public Eye

1. **Red Speed camera:** Red speed cameras operate automatically day and night. The cameras detect and record the speed of a vehicle by using vehicle tracking radar or electronic detectors that are embedded in the roads surface. These detectors accurately measure the speed of the vehicle. If the speed of the vehicle exceeds the speed limit, a digital photograph is taken of the offending vehicle. The image of captured vehicles registration number is perused and fed manually to the computer. The address of the Vehicle registered with the RTO is obtained through a interface with the RTOs Vehicle registration Database, along with details like, the owner of the vehicle, Make, Model, Class of vehicle. Based on the address obtained, a Notice under the provisions of Sec 133 of IMV Act is generated in an automated process, in which the details like Owner of the Vehicle, Date and time of Violation, make model, the fine amount and location, where the violation was noted are printed and sent to the Owner on the address.

2. **Field Traffic Violation Report (FTVR) :** This involves the constabulary noting down the details like the Registration Number, Type of Vehicle, Color and make in a pre-printed proforma called FTVR (Field Traffic Violation Report). The data on the FTVR is fed in to computer at the police station and sent to the

Automation Enforcement Center equipped with computers, software and vehicle database provided by the M.V Department.

These violations are processed as earlier for red speed camera and Section 133 notice is generated.

3. Public complaints : which came to the traffic police through various models like Online Complaints through Interactive Website, Facebook and Public Eye are processed as earlier and Section 133 notices are generated.

3.1: Interactive Website : www.mysorecitypolice@gov.in

3.2 : Public Eye : www.mysorecitypolice@gov.in/TrafficViolation.aspx

7. Citizen Centricity :

i. Impact on effort, time and cost incurred by user

The user has multiple options for payment and also can avoid going to Police Stations. With instructions at every level, software developed is user friendly saving lots of time and cost incurred is low, there by bringing in greater transparency.

ii. Feed back / grievance redressal mechanism.

Owners of the vehicle on receiving FTVR notice generated from the automation centre, inform the automation centre about change of ownership of the vehicle, the same is informed to the concerned RTA for information and initiate process of change of ownership.

Citizen Satisfaction is carried out by an independent organization to ascertain what people expect and how much of their expectations are met by

the traffic Police. We have a social networking page . Facebook , Public Eye and Interactive Website to know the problem faced by the public on the field and to take remedial actions. We get the feedback from media also. The critical and rational analysis of the concept helps us in improving the value providing system.

iii Audit Trails:

Audit for fine collected is conducted every quarterly by DCP Head Quarters, Crime & Traffic amount collected through FTVR is deposited on a daily basis to the Government treasury account at State Bank of Mysore and treasury reconciliation is done on monthly basis and audit from the office of the DG&IGP Karnataka State is done on annual basis.

iv. Interactive platform for service delivery.

How 133 notice are served and compounded

Printed notices are served through postal service. If the owner of the vehicle pays the fine it gets deleted in the server. If not it comes up in the hand held hand set of traffic officer. If the owner wants to clear the pending fine by approaching .

1. Any traffic Police station
2. Any traffic ASI, PSI, PI
3. Payment at centralized Automation center

Citizens can settle the traffic violation challans issued against their name as well as parking violation issued to them by visiting the Traffic Automation Center or any other traffic Police station or traffic Police Officer. These places are connected using a dedicated network to the Central Application Server kept at Traffic Automation Center.

v. Stakeholders consultation.

- No stake holders -

8. Adoptability and Scalability :

The Automated Challaning system can be adopted by all the cities in India. The Project is scalable and it can be totally eliminate physical booking of cases by traffic Police leading to transparency.

9. Adaptability Analysis :

i. Measures to ensure adaptability and scalability.

The project can be taken over by the bureau of Police research and development, Ministry of Home Affairs and circulated to all states.

ii. Measures to ensure replicability.

The software developed for Automated Traffic Challaning system by Mysore City Police can be adopted by any city traffic Police.

iii. Restrictions, if any, in replication d or scalability.

There are no restrictions.

iv. Risk Analysis.

The risk is minimal

10.New Models of Service delivery:

Process to initiate payment of Challans through Mysore-One Centers and also by logging on to Mysore Traffic Police Website.

11. Efficiency Enhancement :

i. Volume of transactions processed :

Traffic violation cases booked through Automated Traffic Challaning System in Mysore City from 14th May 2013 to till date.

Month	2013	2014
Jan		41072
Feb		35307
Mar		25976
Apr		27966
May	160	39344
Jun	398	32308
Jul	470	31659
Aug	598	26348
Sep	1032	
Oct	15136	
Nov	17869	
Dec	30520	
Total	**66156**	**259980**

Fine amount collected through Automated Traffic Challaning System in Mysore City from 14th May 2013 to till date.

(Amt. In Rs.)

Month	2013	2014
Jan	-	1122600
Feb	-	653100
Mar	-	1235400
Apr	-	905800
May	-	1026400
Jun	-	921200
Jul	-	977600
Aug	-	814200
Sep	2500	-
Oct	294900	-
Nov	665500	-
Dec	1045200	-
Fine Amount collected from Black Berry	-	**2028500**
Total	**2008100**	**9684800**

Total Fine Collected is Rs/- 1,16,36,200 till date

ii. Coping with transactions volume growth:

100%

iii. Time taken to process transactions:

Within a minute

iii. Accuracy of output:

100%

iv. Number of delays in service delivery:

-NIL-

12. User Convenience :

i.   Service delivery channels.

The Automated Traffic Challaning system is one of the most transparent system of booking cases for traffic violations. It is very convenient as it saves time, energy of traffic Policeman. For general public it provide a convenient platform to pay fine amounts for traffic violations.

ii.   Completeness of information provided to the users.

Various measures have been undertaken by Mysore City Police in giving service satisfaction to the public and always tried to rise up to their expectations. Every new innovation process which gets initiated by our department has maximum bearing on public life and movement of vehicles. All our efforts go in vein if the initiatives are not accepted by the public. Every time all our initiatives may not whole heartedly welcomed by general public but after sometime they have felt that it was %essential+.

The department regularly conducting customer service satisfaction surveys by conducting traffic regulatory meetings with public on 3rd Saturday of every month, trying to build trust and to obtain a multitude of information.

The various traffic management and enforcement devices like blackberry, use of breath analyzers and interceptor vehicles etc., have been very well accepted by public and information provided to public is 100%.

iii. Accessibility (Time Window).

99%

iv. Distance required to travel the access points.

Half an hour

v. Facility for online/offline download and online submission of forms.

5 Minutes

vi. Status tracking.

5 to 10 Minutes

13. Sustainability :

Training of Traffic Police Personnel for Automated Traffic Challaning System

Training is one of the important requirements for successful implementation of any new project. Generally Police officer and men are trained in maintenance of law & order, prevention and detection of crime. They are seldom given any specialized traffic management training. It is important that before implementation of Automated Traffic Challaning System, traffic officers and men should be given adequate training to enable them to handle hand held

enforcement devices, sophisticated cameras and other equipments. Initially the Mysore City Traffic Police was trained at specialized Traffic Training Institute in Bangalore.

14. Result achieved / Value Delivered to the beneficiary of the project :-

i. To Organization :

Reports will be provided to senior officers to monitor the activities. Web reports will be provided with the login and password to protect the data from unauthorized access. Following are the reports that are generated for MIS purposes:

- Vehicle wise offences daily/monthly or weekly reports.
- Police station wise offences.
- Station wise case booked report
- Station wise amount collection report.
- Station wise issual of Police Notice and ON THE SPOT FINE (CRR receipt).
- Officer wise case booked and fine amount collected report.

- Report on cases booked and fine collected report.
- To use this as effective tool of e-governance to manage, monitor and administer law enforcement in the field.
- To give more thrust for the Traffic police personnel who monitor the Traffic on the field by giving them wider opportunity to penalize the erring motorists.
- For wider use of punitive actions such as suspension of Driving Licence, Registration certificate and permits as provided in the IMV Act
- Facilitate in identifying frequent violators and initiate appropriation corrective action.
- To have complete data of motor vehicle owners address, licence holders particular, and violation particulars.

- Respective offenders automatically tracked and notices with enhanced fines are sent to repeated offenders.
- To reduce the processing time of violation and disposal of the same

ii. To Citizens :

- To provide more transparency in enforcing traffic law by using cameras and e-enforcement.
- To provide transparency in Challaning traffic violations.
- To reduce rash and negligent driving by quality enforcement.
- To avoid conflicts between police & public during traffic law enforcement.
- To increase awareness of traffic rules and regulations among road users.
- To induce transparency in enforcement of traffic laws and rules.
- To assure availability of experts in this line who can very well provide valuable assistance in traffic law enforcement and software related issues.
- To provide online and web-interactive assistance experts in best use of aid in various traffic law enforcement issues throughout the country.

iii.   Other Stake holders :

NA

15.   Extent to which the objective of the project is fulfilled :-

FTVR and Automated Challaning system was launched on 14th May 2013 and till date 3,25,189 violations were recorded and fine amount of Rs. 1,16,36,200/- is collected.

16. Comparative Analysis of earlier Vs new system with respect to the BPR, Change Management, Outcome/ benefit , Change in legal system, rules and regulations.

With enormous growth of vehicles, poor traffic enforcement is one of the causes for traffic congestion and poor discipline on roads. Road users do not follow traffic rules as violation is a rule not an exception. The old manual challaning system prevalent in most of the cities is not effective, as deterrence level is minimum. In **manual challaning system**, there is **no mechanism to punish repeat offenders.** The system is also not transparent as manual booking system breeds corruption and harassment.

The existing Traffic Enforcement System has the following short comings;

i.   Existing system of manual booking of traffic violation cases consumes lot of time and energy.

ii.   As enormous time is required for manual challaning the traffic violators, Traffic Police officers do not give adequate time for traffic regulation and clearing traffic jams.

iii.   Manual system of booking of traffic violation case is not transparent. It facilitates corruptive practices.

iv.   In manual system, there is no record of previous traffic violations by the drivers. Due to this, repeat offenders escape higher penalties.

v.   There is a scope for pilferage and misappropriation of fine amount collected by Traffic Police. Many a times unscrupulous police officers use duplicate receipt books.

The new Traffic Enforcement Automated Challaning System has the following advantages ;

- To use this as effective tool of e-governance to manage, monitor and administer law enforcement in the field.

- To give more thrust for the Traffic police personnel who monitor the Traffic on the field by giving them wider opportunity to penalize the erring motorists.

- For wider use of punitive actions such as suspension of Driving Licence, Registration certificate and permits as provided in the IMV Act

- Facilitate in identifying frequent violators and initiate appropriation corrective action.

- To have complete data of motor vehicle owners address, licence holders particular, and violation particulars.

- Respective offenders automatically tracked and notices with enhanced fines are sent to repeated offenders.

- To reduce the processing time of violation and disposal of the same

- To provide more transparency in enforcing traffic law by using cameras and e-enforcement.

- To provide transparency in Challaning traffic violations.

- To reduce rash and negligent driving by quality enforcement.

- To avoid conflicts between police & public during traffic law enforcement.

- To increase awareness of traffic rules and regulations among road users.

- To induce transparency in enforcement of traffic laws and rules.

- To assure availability of experts in this line who can very well provide valuable assistance in traffic law enforcement and software related issues.

- To provide online and web-interactive assistance experts in best use of aid in various traffic law enforcement issues throughout the country.

17. Other distinctive features/ accomplishments of the project :

Mysore City Traffic Police has already implemented Automated Traffic Challaning System from 14th May 2013 . On an average Mysore City Traffic Police books around 1000 traffic violation cases through cameras and another 1200 through hand held Blackberry devices. Mysore City Traffic Police has booked over 3,23,801 cases against traffic violations from 14th May 2013 till date and has collected a fine amount of Rs. 1,16,36,200/- during the same period. Mysore City Traffic Police is presently using 6 Enforcement Cameras, 42 Surveillance Cameras and around 100 digital cameras for booking of cases. This system has brought dividends for Mysore City Traffic Police in the form of greater transparency and effective enforcement of traffic laws. Apart from this, the ready availability of data on past violations has enabled Mysore City Traffic Police to send 1136 driving licences for suspension.

Automated Traffic Challaning System bring in transparency in booking cases against violation of traffic rules. It enhances the credibility of traffic Police to a great extent.