

e-challanSystem for Bhopal Traffic Police

Bill Of Material

S.No	Item	Qty
1	Handheld machine for E-challansystem	100
2	Server	02
3	Workstations	05
4	Multifunction printer	02
5	Color Printer	02
6	Switch	As per requirement
7	1.5 Ton Window A.C.	04
8	UPS 1 KVA	05
9	e-challanSoftware	
10	<p>Functional Requirement</p> <ul style="list-style-type: none">• Minimum 2 technical persons (1 maintenance and 1 hardware) should be provided for 3 years regular basis in control room whose salary will be paid by vendor.• Recurring Expenses incurred on Printing Stationery of Thermal Printer Rolls of 100 Handheld machines for 3 yrs.• e-challansystem maintenance for 3 years after handover.• Training for Running, operating e-challansystem for a period of 2 years• Provide Sim card and 3G Data usage charges for 3 years for connectivity using APN to be done by the Vendor.• Online connectivity to R.T.O. Database and NCRB database with e-challansystem to be done by the Vendor in assistance with District Police .• Payment Gateway (Because Payment will also be receive through Credit/Debit Card using web portal) to credit the challan amount to a pre-defined government account by the Vendor.	

01- Hand Held Device for e-challanSystem

Specifications	
Processor :	latest high speed processor min 600 MHz with suitable operating System
Memory :	512MB RAM or higher, 1 GB Flash or higher, With expandable micro SD card Capacity min 32GB
Interface :	Interface : RS232, USB 2.0 Host USB 2.0 Client
Wireless :	Wireless : WLAN (IEEE 802.11 b/g/n) GSM/GPRS/EDGE/CDMA should support 3G
Communication:	USB 2.0, Bluetooth
Power :	must last for minimum 6 hrs of use in the field suitable mechanism for charging from 220V standard AC power supply must be provided, Vehicle charger also to be provided
Printing method:	Width Minimum 3” Print Technology: Direct Thermal, at least 200 DPI Print Speed: 60 mm per second or better Easy paper loading mechanism Media Type: Direct Thermal Receipt Paper
Rugged Structure	Drop Specification: 5 ft multiple drop Ingress Protection: IP 65 or better
Camera	5MP Integrated Camera with flash or better
Display and Keypad	Minimum 3.5” color VGA 640 x 480 resolution QWERTY keypad with long life buttons, touch screen with backlight, must also have option for virtual QWERTY keypad and should be readable in sunlight.
Indications	suitable indication on device for charging, low battery, connectivity etc
Operating Conditions :	Operating Conditions : Temperature (0 – 50 deg C) 5 – 95% RH (Non condensing)
Dimensions and Weight:	Lightweight and should be easy to hold in the palm
Storage	expandable micro SD card capacity min 32GB
Global positioning System (GPS)	Integrated GPS with A-GPS
Other Features	login through unique ID, password and biometric data capture Real time clock with Battery backup Embedded e-challanSoftware e-challanApplication: - Required device client software should be developed and installed on each device by the vendor to perform E-challanprocess on line and off line mode with server as per user requirement. Operating System and application drivers:- Suitable operating system.
Accessories	User manual ,Device cover casing , USB Cable and e-challan Software CD.
Reader	Contact & Contactless Smart Card Reader and MSR reader, Fingerprint scanner, Integrated Bar Code Reader (1D/ 2D)
Warranty/support/updates	Comprehensive for 3 Years

02- DATABASE/APPLICATION SERVER

Specifications

Processor	2 processors of Intel Xeon Processor E5 V2 family or above
Minimum Number of Cores	6
Minimum Clock Speed:	2.90 GHz
Minimum L3 Cache:	15 MB
Memory	RAM: 8 GB DDR3 1333Mhz expandable to minimum 16 GB.
Disk Controller	Integrated SAS Controllers
Hard Disk Drive:	3 Nos. of 300 GB, 2.5" 10K RPM or higher 6Gbps SAS HDD
Internal Storage	4.0 TB through hot swap SATA / SAS HDD
Network Interface:	Minimum 4 x 1 GB
DVD Writer	SATA DVD-ROM - R/W or DVD ROM.
External Interface	Two USB ports (Ver 3.0), Two RJ-45, Ethernet, keyboard and mouse, Two USB (Ver 2.0)
Disk Bays:	Minimum 5 hot-swap SAS HDD
Power Supply	94% or more efficient 2 nos Hot Plug Redundant power supplies must sustain full load .
Fans	Hot-plug fans, at least 1+1 redundancy
Graphics Controller	Integrated Graphic Controller with external VGA port and minimum 16MB Video RAM and 1280x1024 resolution
OS Environment	Suitable server license for e-challanSystem application
Products	The server must be comply with following international standards: PCIE 3.0 Compliant, Microsoft® Logo certifications, ACPI 2.0. Compliant, UL/FCC certified
RDBMS	Suitable RDBMS for e-CHALLANSystem - Oracle10g/11g/SQL-2012 or equivalent 200 clients.
Form Factor & accessories	Rack with Cable Arm Guard, Power Distribution Unit and all mounting and equipment Inbuilt / integrated / installed with KVM switch and appropriate TFT Digital Color Monitor TCO certified, USB Keyboard & mouse to Monitor all the Servers. KVM should be compatible with all OS, should have On-Screen Configuration and Activity Reporting displays system-related information on the console monitor, such as selected server name, status, power-up test data and configuration menus, should have two Server Interface Pods (SIPs) - PS/2 or USB, Configuration NVRAM, Password Protection.
Gartner report	Server Should be in the in the list of top 5 server brands as per Gartner report published for India/Asia Pacific/World in the year 2013
Warranty/support/updates	Comprehensive for 3 Years

03- Work Station

Specifications

Processor:	Intel Core i7 fourth generation or better
RAM	8 GB Dual Channel DDR3 SDRAM
Graphics:	2048 MB dedicated graphics
DVD	16X DVD-ROM
Display:	19" LED monitor
Keyboard:	Wireless, 104 Keys, OEM make
Mouse:	Wireless mouse
Ethernet Port :	10/100/1000 Dual
HDD:	1 TB HDD (SAS/SCSI)
OS:	Genuine Windows 8 Professional
USB:	4 external USB Ports ,
Audio:	Audio card of standard company(HP Creative Recon3D PCIe Audio Card
Camera	High quality HD web camera
External Storage	1 external Hard disk (Min Back up 1 T.B)
Antivirus	License for Three Years
Certification –	UL/CE OEM must be among top 5 Personal supplier as per latest IDC report in the personal computer segment wrt INDIA/ASIA Pacific/World
Warranty/support/updates	Comprehensive for 3 Years

04- Multi Function Printer

Specification:

Copy			
	Copy Type	Monochrome Laser	
	Copy Speed	18 / 19cpm (A4 / LTR) or better	
	Copy Resolution	Speed priority mode:	600 x 400dpi
		Resolution priority mode	600 x 600dpi
	Halftones	256 levels	
	Zoom	50 - 200% in 10% increments	
	Copy Size	Platen:	Up to A4 / LTR
	Copy Features	2 on 1, ID Card Copy	
	Copy Memory	64MB (Shared)	
Print			
	Printer Type	Monochrome Laser	
	Print Speed	18 / 19ppm (A4 / LTR)	
	Print Resolution	Up to 600 x 600dpi, 1200 (equivalent) x 600dpi	
	Print Memory	64MB (Shared)	
Scan			
	Scan Type	CIS	
	Scan Resolution	Optical:	Max 600x600dpi
	Driver enhanced:	Up to 9600 x 9600dpi	
	Colour Depth	24-bit	
	Document Size	Platen:	Up to A4
	Output File Format	TIFF, BMP Mac: PDF, JPEG, TIFF, BMP, PNG	
	Pull Scan	USB	
	Standard Interface	USB 2.0 Hi-Speed	
	Certification –	UL/CE	
	Warranty/support/updates	Comprehensive for 3 Years	

05- Colour Printer

Specification:

- Print technology : Laser Colour
- Print speed : Colour Up to 30 ppm or higher
- Print quality Image Ret 3600
- Print resolution Black: Up to 1200 x 1200 dpi
- Colour: Up to 1200 x 1200 dpi
- Duty cycle (monthly, A4) Up to 75000 pages
- Processor 800 MHz
- Memory 1GB (1024MB)
- Certification – UL/CE
- Warranty/support/updates Comprehensive for 3 Years

06- Switch

Specifications:

- 24 Switch port with 1 gbps LAN speed –layer 2
- OEM Certifications CE, UL
- Warranty/support/updates Comprehensive for 3 Years

07-

Window A.C (ENVIRONMENTAL CONDITIONING):

Server room temperature should be maintained at $21^{\circ}\text{C} \pm 2$. For this, Split type

Air conditioner of 1.5 ton each as per following specifications should be provided (including complete installation as per the site).

Specifications:

- Cooling Capacity (Tonnes) 1.5
- Energy Efficiency Ratio (EER) 8.2 or better
- Compressor Type Rotary
- Refrigerant Gas R-22
- Temperature Control Digital
- Remote Control Infrared remote control
- Voltage (Volts) 220
- Frequency (Hz) 50
- Phase 1
- Automatic Voltage Stabilizer To be provided
- BEE India Star Rating At least 4 star rating
- BIS conformance Conforming to IS 1391
- OEM Certifications CE, UL,
- Comprehensive 3 Years onsite warranty

08- UPS

Specifications:

- Capacity : 1 KVA
- Battery backup : Min 30 minutes or better
- Protection Required for : Short Circuits
- Over Loading
- Over Temperature
- Input low/ high voltage control
- DC low/high voltage trip
- OEM Certifications CE, UL
- Batteries Make standard ISI
- Warranty/support/updates Comprehensive for 3 Years

09- e-challansystem Software

Components/Functional requirement/modules/ Scope of work

e-challansystem shall have following major components/ services:-

1. **e-challans**software
2. Handheld machines having client software for generating e-Challans.
3. **e-challan** server software installed on dedicated server at Data center.
4. Web based **e-challan**facility for online challan payment by citizen.
5. Connectivity of all handheld machines with e-challansystem server over cellular network
6. Payment gateway facility for receiving online payment.
7. Connectivity to Vehicle Database of RTO/NCRB.

10- Functional Requirement of e-challan system

- Minimum 2 technical persons (1 maintenance and 1 hardware) should be provided for 3 years regular basis in control room whose salary will be paid by vendor.
- Recurring Expenses incurred on Printing Stationery of Thermal Printer Rolls of 100 Handheld machines for 3 yrs.
- e-challansystem maintenance for 3 years after handover.
- Training for 2 years for running and operating e-challansystem
- Sim card and 3G Data usage charges for 3 years for connectivity using APN to be provided by the Vendor.
- Online connectivity to R.T.O. Database and NCRB database with e-challansystem.
- Payment Gateway (Because Payment will also be receive through Credit/Debit Card using web portal) to credit the challan amount to a pre-defined government account.

The e-challanSystem Software should consists of the following modules

1. Photo Collection
2. Violation booking
3. e-challanGeneration
4. Postal dispatches
5. Postal Statement
6. Postal returns and return info feeding
7. Data entry in vehicle Regn. remarks database
8. Provision to enter comment Sold out vehicles/Fake vehicles /Fake addressed Vehicles/Theft Vehicles/Authorized complaints/Multiple owners)
9. Identification of Police Stations, Junctions, Courts, Police Staff for the Traffic dept.
10. MV Act cases
11. Action dropouts as per Court decisions
12. Report Generation
13. Online Pending Challan Verification
14. Online Payment gateways (In Secure Architecture)
15. Online Violation photo view facilities
16. Upgrading the E-challanSoftware
17. Online Uploading photos by the Police in Control room
18. Online handheld machine tracking System
19. Server database and crash recovery of data.
20. Regular Backup System
21. Performance tuning of the Application, Database tuning, Network tuning, Web Service tuning.
22. Traffic violators History (for suspension of driving license)

e-challan software shall be able to perform following but not limited to:

1. e-challan software shall work in client – server mode, where 100 handheld devices units will act as clients connected to server through cellular network for data transfer. The system should be scalable for 1000 devices (server sizing will be revisited when scaling up devices from 100 to 1000), which may be added later on. Suitable number of IP Addresses for e-challan system server shall be acquired in the name of Bhopal Police for the system by the vendor.
2. e-challan system shall be able to retrieve vehicle owners Details and vehicle data from RTO database to minimize data entry.
3. e-challan system shall be able to retrieve vehicle Registration Details by reading Vehicle Registration Smart Card and Driving license details by reading DL Smart card to minimize data entry.
4. The login authentication of the user using the handheld devices should be done locally, so that device is usable even when there is no cellular network connectivity. Login/password should be saved in hand held device/mobile phone till connectivity is restored with the server. Server should maintain log of all current. Any access to the system must be recorded along with date, time, user ID and IP Address.
5. Whenever any traffic police officer is suspended, dismissed or for any other reason is disqualified or when blocked from server, there has to be a provision in e-challan software to disqualify his/her access the device or system.
6. While filling challans in handheld device it should be possible to go back to previous screen any time, edit the data and come back to present screen.
7. Certain fields such as name of driver, registration number of vehicle, offence type, date, time and location should be mandatory. In case of notice files information such as Registration number of vehicle, offence type, date, time, location, makes and colour should also be mandatory fields. No notice or challan should be generated without filling these mandatory fields.
8. Input data validation as per defined rules, must take place in the handheld device itself through client software to eliminate errors prior to transfer into the database.
9. A unique challan number should be generated through client software for each challan. (Example device code/circle code/year/unique serial number). The server must assign a separate primary key for each challan uploaded on the server.
10. Traffic officers should be able to issue challans only for Violation they are authorized to register.
11. As soon as a vehicle registration number is entered, the handheld device should automatically check from the server if the vehicle is stolen, wanted in any criminal case or is in the list of suspicious vehicles.
12. The most frequent traffic offences should be kept at the top in the drop down menu and offence ingredients should be available if required by officer.
13. Date, time and GPS coordinates of place of challan should be automatically populated in the relevant fields of client software.
14. Compounding amount must populate in the field automatically from master table.
15. Compounding amount must appropriately increase as per Motor Vehicle Act for Repeat offenders. This field should not be editable by the traffic officer.
16. After a challan has been printed, the officer should not be able to change or delete any challan data even when there is no connectivity and the data has not been pushed to central server.
17. Hand Held device users, other users who are connected with server and Administrator should have full rights to change their password. Passwords must Travel to server in encrypted form.

18. User forms and GUI of client and server software must be intuitive and easy to use and require minimal training. GUI should have menu driven combo boxes, radio buttons etc. to minimize number of keystrokes.
19. At any stage, context based help should be available to the user using the device.
20. General help files should also be available in device.
21. The client application should be capable of storing data locally for at least 100 challans when off line. Data synchronization with server should take place Automatically whenever network is available.
22. Database should be able to concurrently handle, operate and maintain all users which may go up to 1000, with capacity of handling 125 lakh ownership data and huge database size of prosecution of the size of One lakh challans per year with capacity to retain prosecution history for 11 years. Annual increase in vehicles and challan etc. could be 25 %.
23. There should be administration module where in different users or group users, having various rights and privileges as defined by administrator under IT policy, could be created. Only role based access to data base and server should be permitted.
24. Software should have facility to add and manage e-challans. It should be Compatible and connected with mobile e-challanupload application installed in handheld machine.
25. e-challansoftware shall have specific input fields like location (GPS/GPRS based) with provision of entry, Officers detail who is making challan, Vehicle number, drivers detail / License number in case of in person SPOT challan, date and time of challan, Picture upload, Violation type with dynamic challan amount and Act.
26. Separate manageable/ configurable masters for Challan type (Violation type) with Amount and Act shall be present.
27. Provision to open transport department website for searching and entering names and address details of owner of vehicle shall be present.
28. Software should be scalable or made compatible to retrieve data from transport website/NCRB automatically using API / Web services etc. (Integration with other departments will be facilitated to the bidder)
29. Software should have facility to generate various reports related to challans within a date range, ability to filter by Offense type, map on Google for digital mapped analysis, number of Challans Made for a particular person/ driving license number, number of paid / unpaid Traffic e-challans, challans made by particular officer or all by showing Respective numbers of challans.
30. Software shall have a provision of entering chassis and engine number in challan entry form or same may be filled by pulling such data from MP transport website (separate permission and coding required). A report for matching vehicle number for a chassis or engine Number may be generated for verification.
31. With provision of vehicle type like commercial or private, either entry can be Made in challan form or same can be retrieved from transport website for Reporting, verification and action about wrong permit, consecutive challans for a Particular vehicle etc.
32. While making challan of any Vehicle, Software may be able to POP UP and report in detail about previous challans , if any, for the same person / vehicle.
33. The data transmitted using the GSM/ GPRS or any other technology from the device to the server should be using the HTTPS (Hyper Text Transfer Protocol secure).
34. Software should be able to customized as per user requirement as and when required. Vendor should provide all updates and upgrades and software bug fixing free of cost during warranty and subsequent AMC (if given to same vendor). Warranty shall be Comprehensive onsite for whole e-challansystem including Hardware software and accessories as defined in RFP.
35. Software shall have the facility for citizens to pay their challans online through website. The software shall provide the required payment gateway facility.