PUC NETWORKING

.

AVL

PRESENTS

Strengthening of in use vehicle pollution enforcement through Online network based system

Current Scenario of PUC centers

Air pollution in Indian cities comes from different sources such as mobile sources like buses, trucks, cars or two wheelers, stationary sources or industries, etc.

According to EPA (Environmental Protection Agency), driving a car is single most polluting thing that most of us do.

At most of the places PUC centers are running isolated and due to this there is high possibility to generate the fake certificates using fake devices and software applications. So the monitoring of PUC centers by Transport Department is needed which can be achieved by implementing the PUC networking.

There is no system to identify the polluting private vehicle as the vehicles are not regularly coming to transport department for certifications.

In current system, no records are available for checking the compliances of pollution certification and PUC centers are not regularly updating the transport department about the tested vehicles.

The importance of vehicle pollution monitoring is to give good health to our engines which in turn gives cleaner world to mankind.
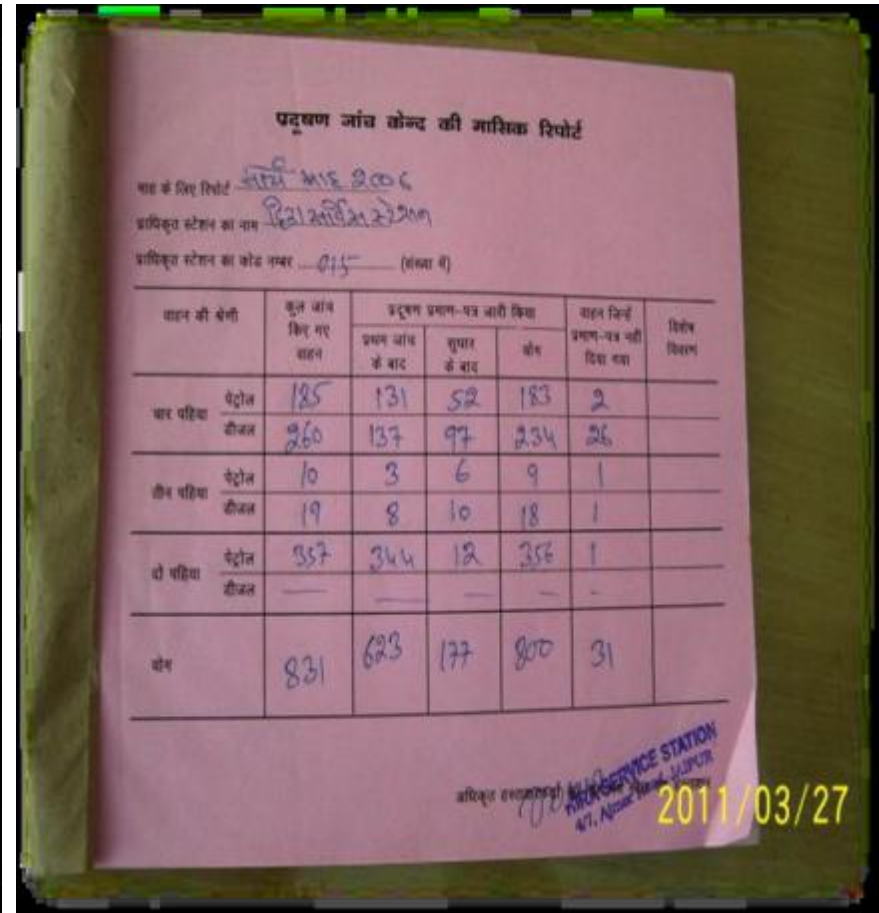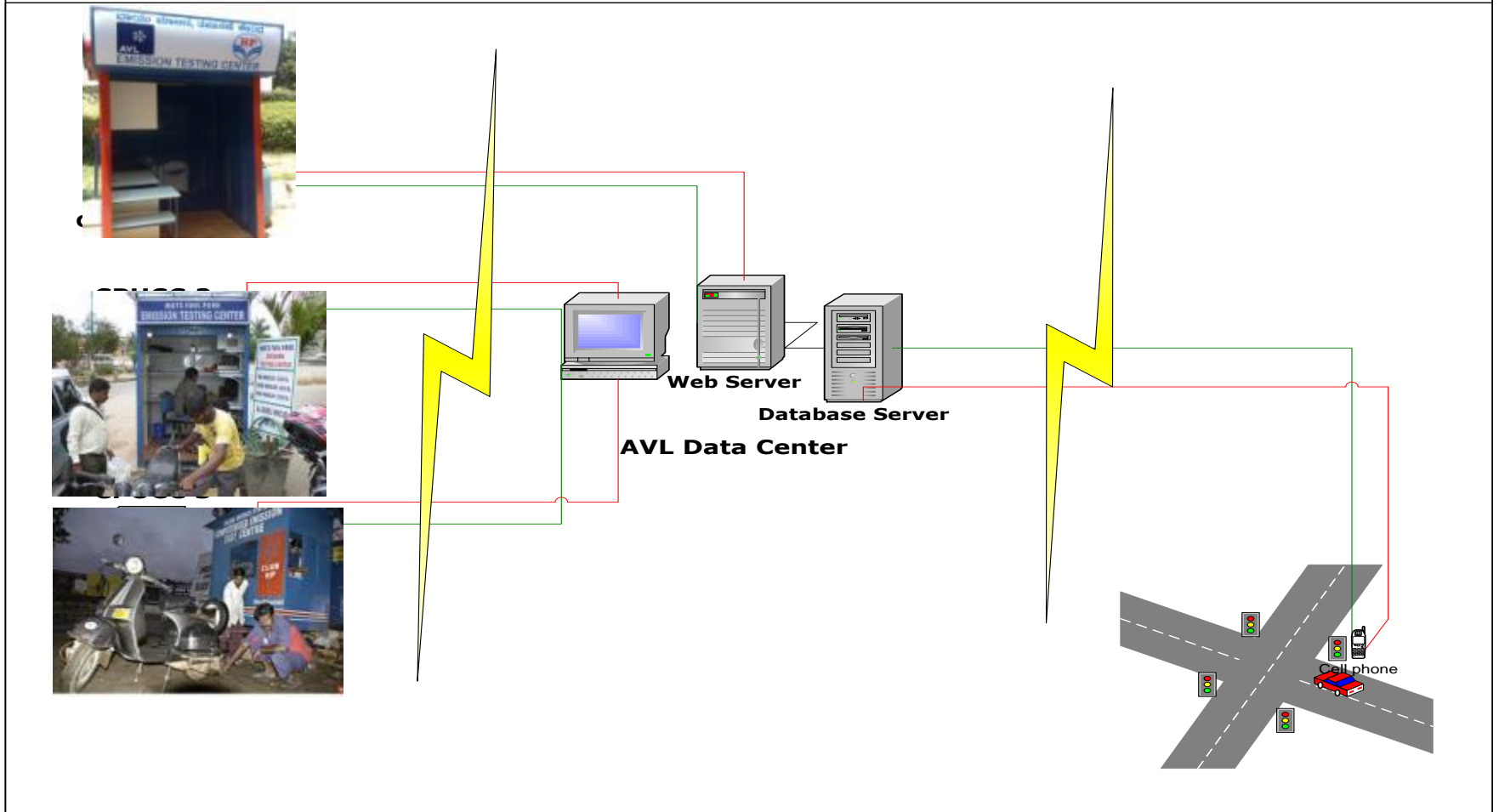
Present System

Detailed Layout Diagram

Minicomputer

Transport Dept. manually feed data in server for analysis
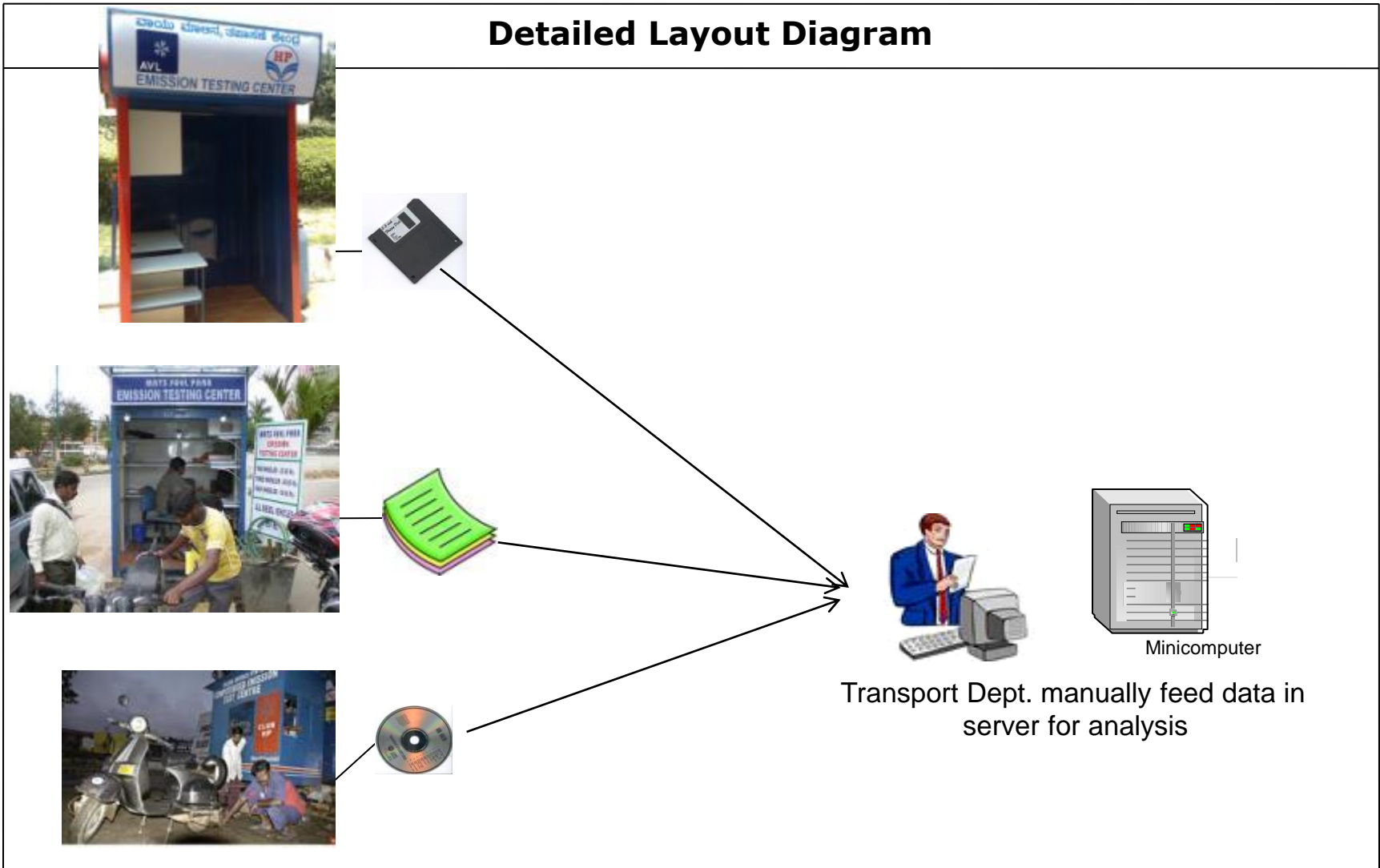
Present System

System Audit – Manual method

Next Generation: On Line system

Detailed Layout Diagram

COMPARISION

PRESENT SYSTEM

·

- Customer has to use device vendor software for data acquisition, certificate generation & manually send the data to transport department

- Present system is offline testing model

- Customer has to maintain database & all information at their end

NETWORKED SYSTEM

- Customer requires only internet connection to connect to the central server, customer need not use vendor software, automatically data is stored in server.

- Latest system is a real time online system model

- All information & database will be stored in central server

COMPARISION

PRESENT SYSTEM

- In the case of any change in regulation customer has to get software from device vendor

- Vehicle owner & traffic police can't check authenticity of certificate

- Online data analysis is not possible

NETWORKED SYSTEM

- All the regulation has to be updated at central server & it automatically reflects on all emission centers

- Vehicle owners & traffic police can verify the certificate by sending SMS on their mobile phone.

- Online data analysis is possible, this also helps in reminder generation & online checking of certificates

System Benefits

Next Generation: On Line system

TECHNOLOGY BREAKTHROUGH

➢ The new concept is breakthrough in terms of technology & simplicity of operations as it facilitates online testing

➢ The certificate is generated at Central server and the decision of pass fail is taken.

➢ The PUC centers are just termibal for interface between equipment and server and finally printing the certificate generated by server.

➢ The puc owner can subscribe certificates quantities monthly or annually just like cable/dish tv to run emission center.

➢ The staus of Equipment calibration and Amc is monitore online and testing at center can be hold up any time through server.

Next Generation: On Line system

Benefits- PUCC User

1. Automated online of data and analysis, no need to maintain test data at their end.

2. No requirement of device vendor software

3. Uniform system of testing and compilation.

4. The renewal of subscription is online

5. User Friendly system.

6. Time efficient system.

7. Cost Effective, Reliable and uses latest technology.

Next Generation: On Line system

Benefits- Transport department

1. Automated real time data availability from the all PUC centers.

2. PUCC center has no control, works only like a terminal.

3. Reliability of data is insured at the server end.

4. Online supervision of the transport department - Online center audit, Pass / Fail judgment and various emission parameters analysis.

5. Online Reports : Read only access to data reports can be provided to any autonomous national/ international body.

6. Automated response can be sent to the vehicle owners for reminding them of the validity of their certificates, through SMS from the Transport Department.

7. Road side verification possible by police using sms facility (in future).

8. The system will reduce drastically the malpractises / manupulation in emission test.

9. The testing fee is printed on the certificate.

NETWORKING OF EMISSION CENTERS IN DELHI and KARNATAKA AT GLANCE

➢ This project is executed from transport department through NPOs (a govt of karnataka enterprise) in state of Karnataka.

➢ Similarly this project is executed from transport department through NPO in state of Delhi.

➢ NGO's has entrusted AVL India Pvt Ltd to execute this project with an mou.

➢ This project started in Dec 2008 in State of Delhi and running successfully.

➢ The project started in State of karnatak in 2010 and valid for 6 years with the scope of renewal.

Glimps through Networking system

PUC Networking

OBJECTIVE:

To connect all Computerized Pollution under check centers (CPUCC) to a centralized server (physical or cloud server) in order to capture online data of all Computerized Pollution Check centers for enhanced analysis, inspections, reporting and future planning.

SYSTEM OVERVIEW:

All CPUCC will be connected to a centralized server and CPUCC will upload online test date to this server. The Transport Department can analyze the compiled data on various basis, provided reports at Website.

Networking software product is client-server architecture based. This has two main components

PUC client software application which runs at PUC center computer.
Web application which runs at central server.

PUC Networking

System Overview Diagram:
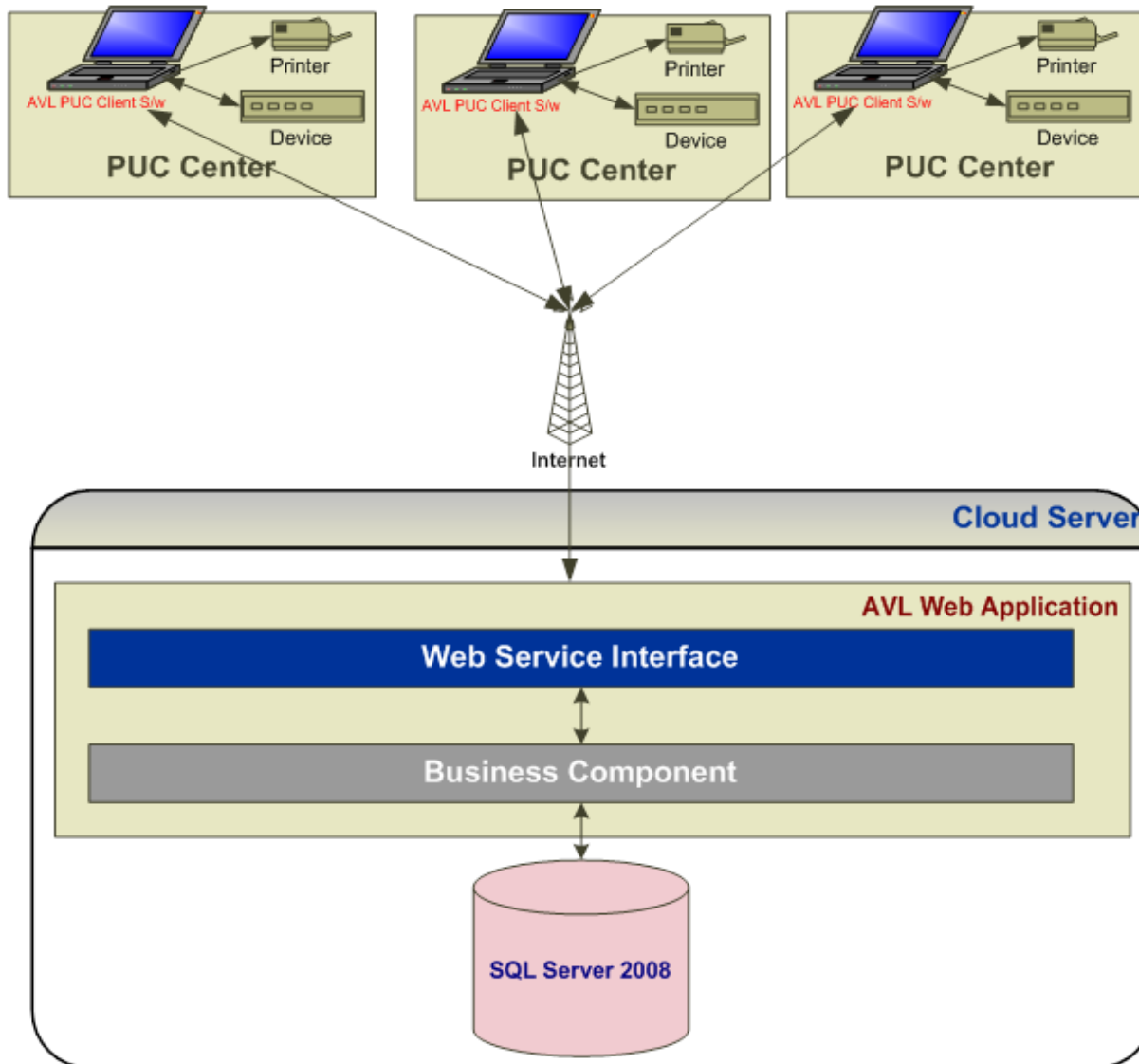
PUC Networking

HIGH LEVEL FEATURES OF NETWORKING SOFTWARE:

This application is fully online network supported. It is assumed that all PUC center will have high speed internet connection.

High level features details of the software application

PUC client software features

- Separate Login for each licensed PUC center: Single login will work for both Petrol and diesel emission test or Petrol/Diesel emission test whichever is applicable.

- Procedure for Petrol / Gas vehicle emission test.

- Procedure for Diesel emission test.

PUC Networking

HIGH LEVEL FEATURES OF NETWORKING SOFTWARE:

Web application (Website) features

- Different user logins based on the user roles, following is the list of user role
    - Admin
    - Reporting
    - Operator
    - Manufacturer
    - Customer Support
- Web application will have reports in which predefined report formats will be available for analysis and or record keeping , following are example reports
    - Daily vehicle test report.
    - Monthly vehicle test report.
    - Reports for passed and failed Petrol and diesel vehicles
    - Center wise reports
- Website will help device calibration status and license status.
- PUC software patches and upgrades will be available at website (if any).
- Complaints logging and tracking.

Petrol : Vehicle Data Entry Screen

Petrol : Vehicle Test Screen

Diesel : Vehicle Data Entry Screen

Diesel : Vehicle Test Screen

Web Application

Online Data Analysis

Main Home Page Screen

Transport Department ,Karnataka

The Commissioner For Transport, Office of the Commissioner for Transport Department 5th Floor,M.S Building,

Dr. Ambedkar Veedhi, Bangalore-560001

KEONICS
Updating people

HOME | LOGIN | RTO OFFICES | PUCC RATE | GALLERY | EFFECT ON HUMAN HEALTH | COMPUTER REQUIREMENT

Transport Department ,Karnataka

Clean and Green

Download Nameboard For Network Centers-Kannada | Download Nameboard For Network Centers-English

Government of Karnataka
Transport Department

No.CT/ENF-1/PUC/2004-05   Dated:29-09-2004

CIRCULAR

Subject: Implementation of new emission standards effective from 1st October'2004.

Reference: The notification of the Ministry of Road Transport and Highways, Government of India, bearing No: GSR No. 111(E) dated 10th February'2004.

1. The Ministry of Road Transport and Highways, Government of India has issued the gazette notification bearing No. GSR No.111(E) , dated 10th February '2004 vide which Rule 115(2) of the Central Motor Vehicles Rules,1989 has been amended and the revised emission standards would come into force with effect from 1st October, 2004 as follows:-

Petrol/CNG/LPG driven vehicles ::

Sl.	Vehicle type	CO %	HC in ppm

Log In Screen
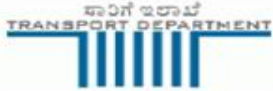
Transport Department ,Karnataka

The Commissioner For Transport, Office of the Commissioner for Transport Department 5th Floor,M.S Building, Dr. Ambedkar Veedhi, Bangalore-560001

HOME | LOGIN | RTO OFFICES | PUCC RATE | GALLERY | EFFECT ON HUMAN HEALTH | COMPUTER REQUIREMENT

Transport Department , Karnataka

Clean and Green

Download Nameboard For Network Centers-Kannada | Download Nameboard For Network Centers-English

☐ **Operator Account**
- View Daily Petrol Report
- View Daily Diesel Report
- View Monthly Summary Diesel Report
- View Monthly Summary Petrol Report
- Change Comport Settings

☐ **Manufacturer Account**
- View Calibration status
- Update Calibration of Equipment

☐ **Reporting Account**
- Centerwise Daily Petrol Report
- Centerwise Daily Diesel Report
- Centerwise Monthly Summary Diesel Report
- Centerwise Monthly Summary Petrol Report
- Zone wise tracking of Centers
- Tracking of Fail Vehicles
- Tracking Registration no
- Tracking Pucc no

Log In

Please Enter your UserName and Password for login

User Name:

Password:

☐ Remember me next time.
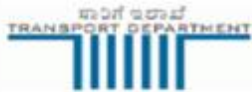
Log In Your Account

Contact Us   Terms & Condition

Copyright Government of Karnataka,

Transport Departmented in internet explorer 5.0 or above with 800x600 resolution.

🌐 Internet | Prot

Centre Home page

Transport Department ,Karnataka

The Commissioner For Transport, Office of the Commissioner for Transport Department 5th Floor,M.S Building, Dr. Ambedkar Veedhi, Bangalore-560001

HOME | VIEW DAILY REPORT | VIEW MONTHLY REPORT | VIEW CALIBRATION & LICENCE EXPIRY DATE | FIND VALIDITY BY REGNO. | LOGOUT

| CHANGE COMPORT | REGISTER YOUR QUERY | VIEW YOUR QUERY | CHANGE PASSWORD || DOWNLOAD

Transport Department ,Karnataka

Clean and Green

Welcome To !

M/s Sree Venkateshwara Emission Testing Center [Old Madras Road,Indiranagar,Bangalore-560038]

Petrol Aproval code: **P044**   Machine Name: Digas444

Diesel Aproval code: **D044**   Machine Name: SMC437C

No. of Certificates Credit: **6791**   Charges Per certificate (Rs): **3.25**

Mobile no: 25257655   Manager/operator Name: S.Parimala

Previous Invoice Details :

Sr.no	Invoice No	Order No	Quantity	Invoice Date
1	003117	ORD006547	10000	17 October 2012
2	002238	ORD004777	10000	05 June 2012
3	001393	ORD002972	10000	19 January 2012
4	000632	ORD001430	10000	10 September 2011
5	000307	ORD000767	5000	05 July 2011
6	000065	ORD000176	4000	13 May 2011

Petrol : List of Reports

AVL

Transport Department ,Karnataka

The Commissioner For Transport, Office of the Commissioner for Transport Department 5th Floor,M.S Building,
Dr. Ambedkar Veedhi, Bangalore-560001

KEONICS
Updating people

PETROL REPORT | VIEW DIESEL REPORT | CHANGE PASSWORD | ADD NEW CENTER | ADD MANUFACTURER | PETROL CENTERS LIST | DIESEL CENTERS LIST | LOGOUT

| SEARCH INVOICE | ADD REPORTING USER | MAKE PAYMENT | SEND REMINDER MSG | ADD MAKE/MODEL | NON WORKING CENTRES

Transport Department ,Karnataka

Clean and Green

Petrol Report :

1. Centerwise Details of Number of Vehicles ie. Pass/Fail/Total Vehicle Checked. The figures are total i.e. w.e. from the date of networking of center to till date.   View Report 1

2. Centerwise Detailed data for all parameters in a selected period for 2 Stroke/4 Stroke Vehicles.   View Report 2

3. PUC Checking record of a vehicle by entering its registeration number.   View Report 3

4. Particulars of vehicle by entering its PUC Certificate number.   View Report 4

5. Calibration Status for Petrol/Diesel Centers   View Report 5

6. Category wise (2wheeler / 3wheeler / 4wheeler) Total Vehicle Check Report for Petrol Centers   View Report 6

Internet | Protected

Internet   100%

Diesel : List of Reports

ಕಾ೧೯೦ ಇಲಾಖೆ

Transport Department ,Karnataka

The Commissioner For Transport, Office of the Commissioner for Transport Department 5th Floor,M.S Building,
Dr. Ambedkar Veedhi, Bangalore-560001

KEONICS
Updating people

PETROL REPORT | VIEW DIESEL REPORT | CHANGE PASSWORD | ADD NEW CENTER | ADD MANUFACTURER | PETROL CENTERS LIST | DIESEL CENTERS LIST | LOGOUT
| SEARCH INVOICE | ADD REPORTING USER | MAKE PAYMENT | SEND REMINDER MSG | ADD MAKE/MODEL | NON WORKING CENTRES

Transport Department ,Karnataka
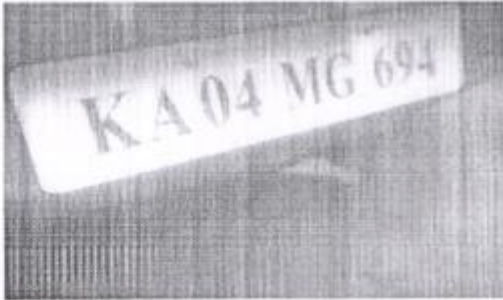
Clean and Green

Diesel Report :

1. Centerwise Details of Number of Diesel Vehicles ie. Pass/Fail/Total Vehicle Checked. The figures are total i.e. w.e. from the date of networking of center to till date.   View Report 1

2. Centerwise Detailed data for all parameters in a selected period .   View Report 2

3. PUC Checking record of a vehicle by entering its registeration number.   View Report 3

4. Particulars of vehicle by entering its PUC Certificate number.   View Report 4

5. Calibration Status for Petrol/Diesel Centers   View Report 5

Internet | Protected

Done   Internet   100%

PETROL : NETWORK CERTIFICATE

COMPUTERISED POLLUTION UNDER CHECK CENTERS (Rule 231(B)(8) of KMV Rules 1989)

This Vehicle meets Emission Standards Prescribed by Rule 115(2) of CMVR 1989. Accordingly the Certificate is All India Valid for Six Months.

Licence No : 866/2007-08

Center Name : M/s Sree Venkateshwara Emission Testing Center

Center Address : Old Madras Road,Indiranagar,Bangalore -560038

Customer Name : NARENDRA

Customer Mobile : 9972579656

Pucc No : P044134548

Vehicle No : KA04MG694

Year of Regn : 26-02-2009

Type of Vehicle : 4 Wheeler

Type of Engine : 4 STROKE

Make : Hyundai Motor

Model : I20

Fuel : PETROL

Catalyst : Catalyst

Test Date : 27-11-2012   10:31

Valid Date : 26-05-2013

Photo of Vehicle

KA04 MG 694

	Petrol Test		Gas Test		
	Pres STD	Measured level	Pres STD	Measured level	Unit
CO	0.5	0.11	--	--	% Vol
HC	750	11	--	--	PPM
CO2	--	13.20	--	--	% Vol
O2	--	12.0	--	--	PPM

Hologram Sticker

Certificate price: ₹ 75

Certificate is not acceptable without Hologram Sticker & Get Renewed the Certificate within the Expiry Date

Seal of Testing Station   Testing Station Code (P044)   Authorised Signatory

KINDLY DESTROY THE OLD CERTIFICATE & DO NOT HAND OVER TO ETC IN ANY CIRCUMSTANCES.

Print   Close

DIESEL : NETWORK CERTIFICATE

FAQ's

- How to check the validity of PUC certificates on roads from following two aspects,
    - Certificate is generated after proper emission test, no fake printed certificate only
    - Check the validity of PUC test on road, keeping in mind that traffic should not be affected means somehow online checking.

- How to make sure that emission test is done properly means no tampering is done with Device or no fake s/w used for this.

Query 1 .How to check the validity of PUC certificates on roads from following two aspects,
     1.1 Certificate is generated after proper emission test, no fake printed certificate only

Solution: This can be achieved By using QR codes/Google Goggles/ Microsoft code
being printed on the certificate .

These code will be generated at server end based on the vehicle data , emission data of the vehicle
along with unique server generated codes .

These codes can be scanned using Mobile phone camera application available easily.
The control for generation of these codes will in our end so we can put our own
security algorithms in the same.
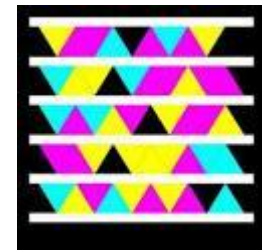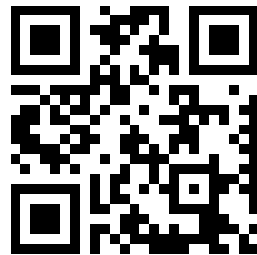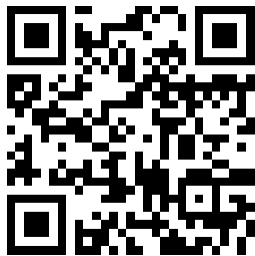
Note: These Codes can be easily read by freely available Code readers like RedLaser ,QR Droid ,etc
These apps are available on net for free download

1.2 Check the validity of PUC test on road, keeping in mind that traffic should not be affected means somehow online checking.

Solution: By sending On line sms to server of the registration No / Puc certificate no to the main server which will send back an sms with all details instantaneously.

Further the PUC test data can be merged with the registration database captured by Transport Department and while issuing the E challan the Puc status can also be verified and if required challans can be issued
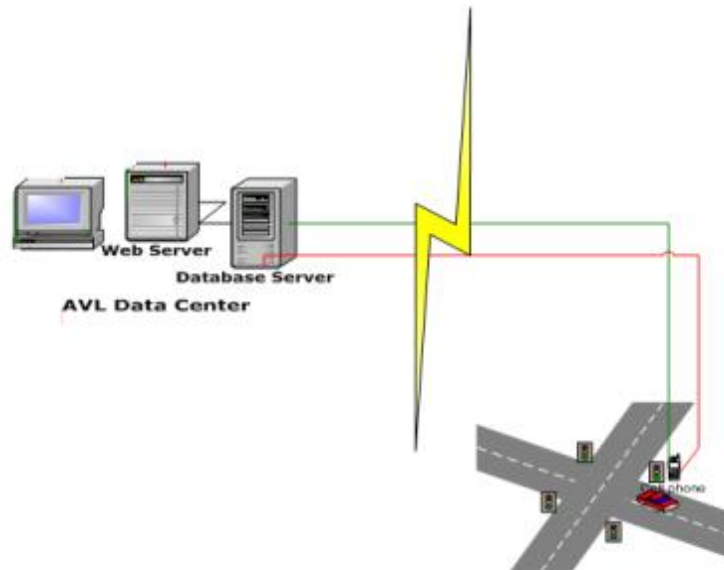
Query 2: How to make sure that emission test is done properly means no tampering is done with Device or no fake s/w used for this.

Solution: Since AVL is a core company of engines development and the knowledge on emission is vast hence using different algorithms for reverse checking the emission test data
Using :

1. O2 value
2. Lambda
3.   CO corrective

 It can be verified weather the test is done correctly or else needs to be rejected.
Online auditing is applied so it also checks for any specific test data pattern coming from each center using device details , vehicle make and model and emission parameters

Further the system has online information about the device calibration status and center's license validity .Through this the center can be made to stop functioning remotely.

Note: On site Enforcement inspection and audit by TD is the most powerful way of curbing malpractices. Enforcement teams can be supported by the reports generated through on line audit of the server data.

Thank You

For any queries:

Contact : Sameer Bhatnagar

Email : sameer.bhatnagar@avl.com

Phone : +91 - 9910390567

Go Green