CSE WORKSHOP (16.11.2015)

Towards
Improved Vehicular Safety on Road
&
Roadworthiness of In-Service Vehicles

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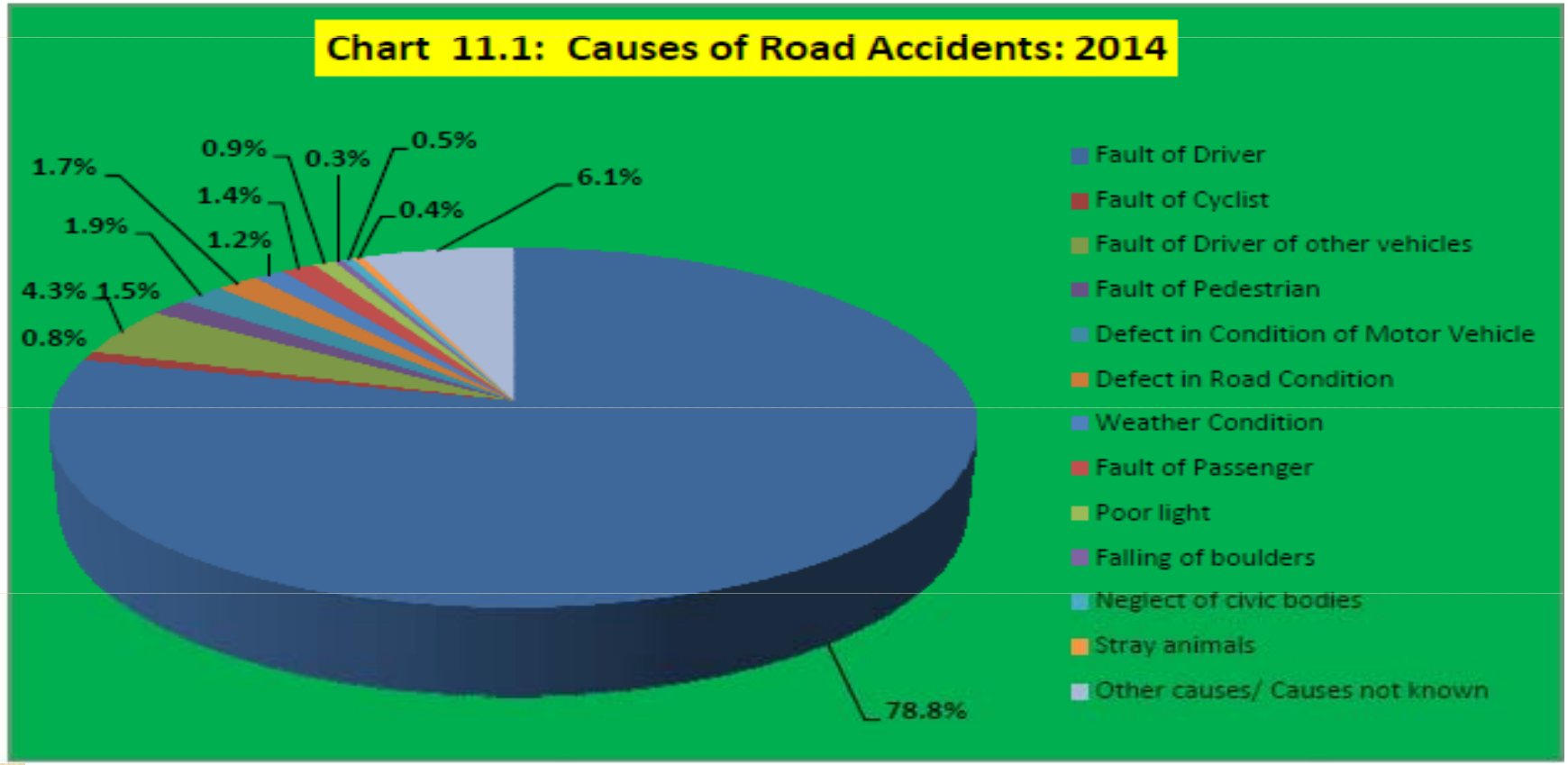
Road Accidents – Global Scenario

- ✓ Road traffic crashes take the lives of nearly 1.3 million people every year, and injure 20–50 million more.
- ✓ Road traffic injuries have become the leading cause of death for people aged 15–29 years.
- ✓ Over 90% of road traffic deaths and injuries occur in low-income and middle-income countries, which have only 48% of the world's registered vehicles.
- ✓ Nearly half (46%) of those dying on the world's roads are "vulnerable road users": pedestrians, cyclists and motorcyclists.
- ✓ In addition to the grief and suffering they cause, road traffic crashes result in considerable economic losses to victims, their families, and nations as a whole, costing most countries 1–3% of their gross national product.
- ✓ Without action, road traffic crashes are predicted to result in the deaths of around 1.9 million people annually by 2020.
- ✓ Only 15% of countries have comprehensive laws relating to five key risks: speeding, drinking and driving, and the non-use of helmets, seat-belts and child restraints.

(Source: Decade of Action 2011-2020, World Health Organization)

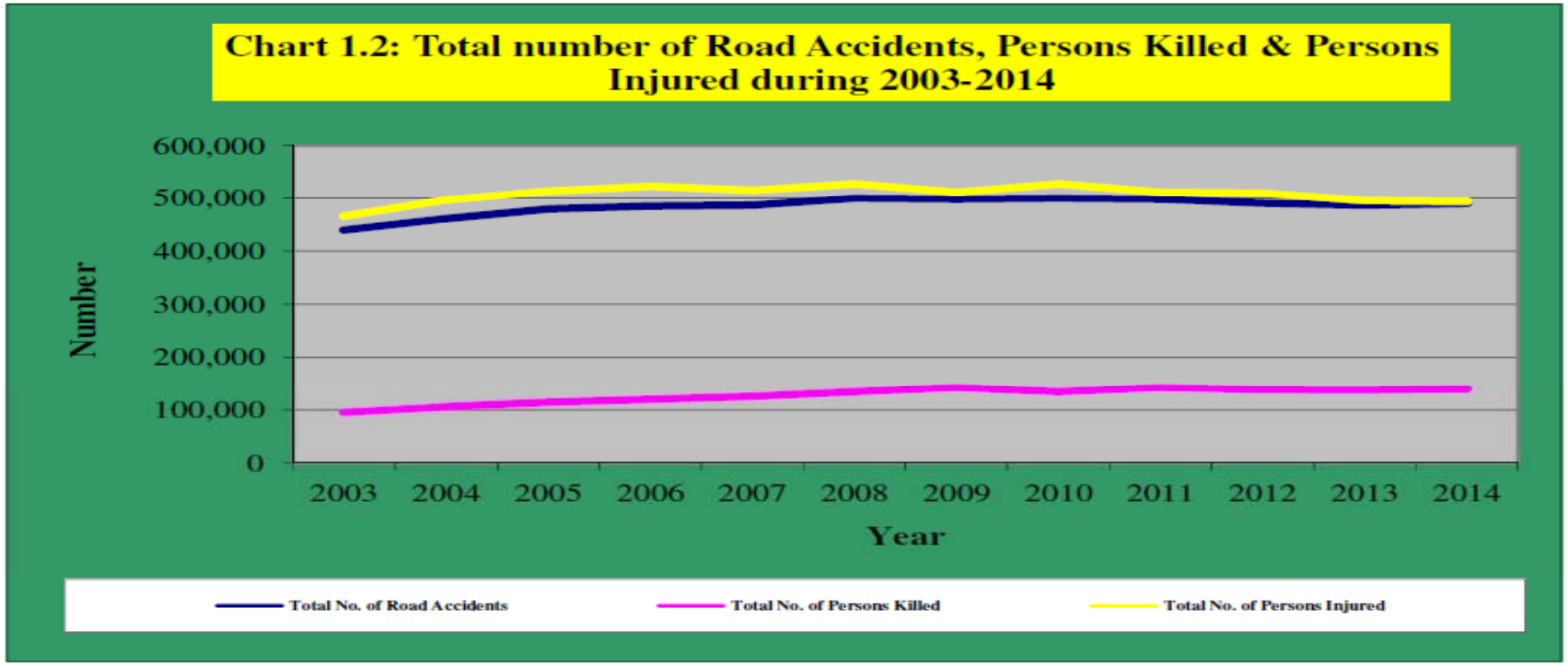
CAUSES OF ROAD ACCIDENTS IN INDIA



- ✓ WITHIN THE CAUSE OF DRIVER ACCIDENTS, EXCESSIVE SPEEDING ACCOUNTED FOR 58% OF THE ACCIDENTS AND 60% OF THE FATALITIES.

WHY I&C???

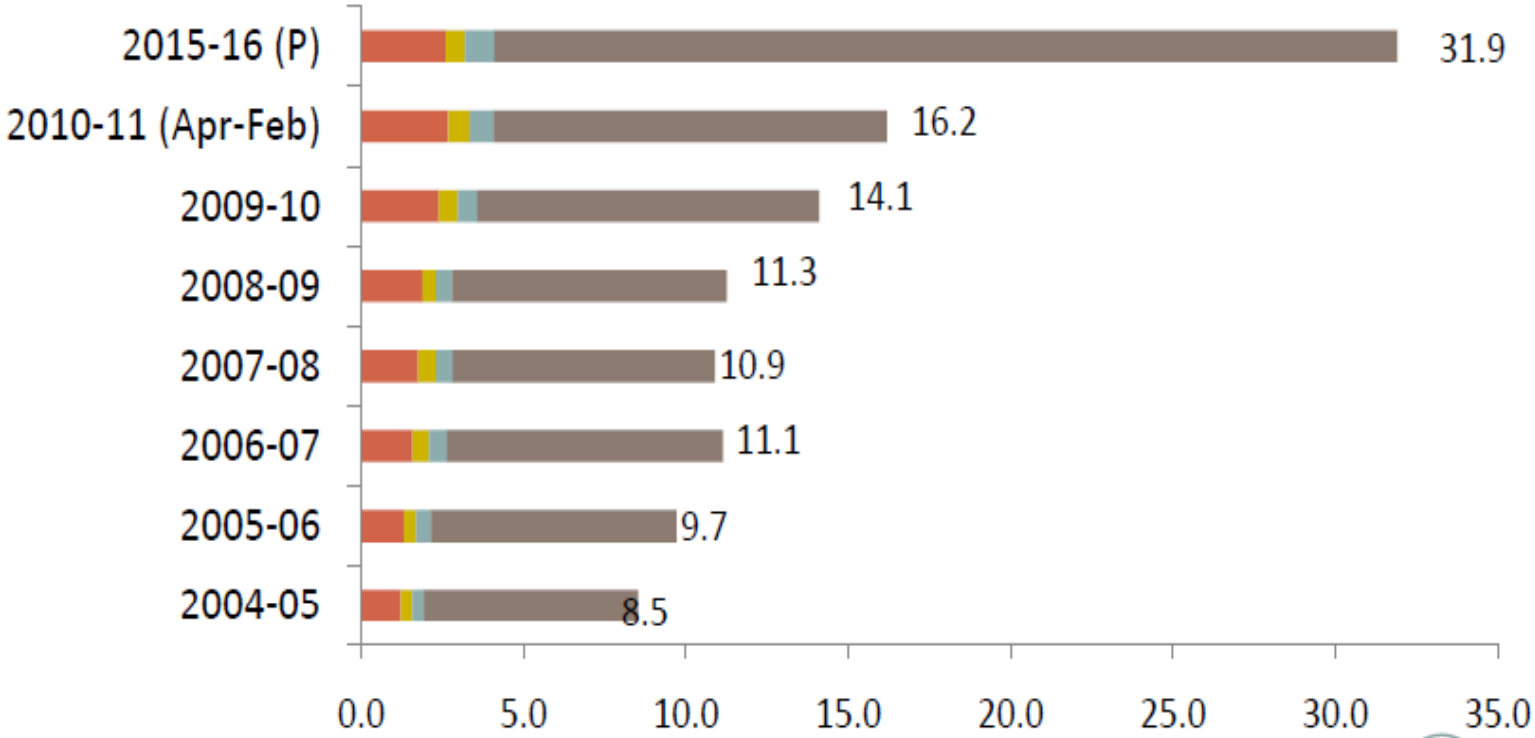
- ✓ In India,during the year 2014, there were around 4.89 lakhs road accidents which killed about 1.40 lakh people and injured more than 4.93 lakh persons in India. The analysis of road accident data 2014 reveals that about 56 accidents resulting in death of 16 lives every hour takes place.



Source: MoRTH

WHY I&C???

- India is experiencing one of the highest motorization growth rate in the world accompanied by rapid expansion in road network and urbanization over the years. Rapid expansion in road network, motorization and urbanization in the country has been accompanied by a rise in road traffic accidents resulting into injuries, fatalities, disabilities and hospitalization with severe socio-economic costs across the country. Road safety has become an issue of concern at national as well at the international level.



	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 (Apr-Feb)	2015-16 (P)
PVs	1.2	1.3	1.6	1.8	1.9	2.4	2.7	2.6
CVs	0.3	0.4	0.5	0.5	0.4	0.6	0.7	0.6
3Ws	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.9
2Ws	6.6	7.6	8.5	8.1	8.4	10.5	12.1	27.8

Projections as per AMP 2006-16
All Vehicles: 31.9 million

Source: SIAM and IBEF Presentation on Automotives, Nov'10

Compliance to RULE 62

Items to be covered

Tests as per CMVR 62

- ✓Headlamp
- ✓Bulbs
- ✓ Reflectors & Reflective Tapes
- ✓ Rear View Mirror & Side Mirrors
- ✓ Safety Glass/Windscreen
- ✓ Windshield Wipers & Washers
- ✓ Steering Gear
- ✓ Speedometer
- ✓ Braking System
- ✓ Exhaust Emissions
- ✓ Dashboard Equipments & Warning Lights
- ✓ Silencers
- ✓ Horn
- ✓ Other Lights/Front & Rear Fog lamps/ Top Lights
- ✓ Rear Under Run Protection Device (RUPD)
- ✓ Lateral Under Run Protection Device (LUPD)

Additional Tests

- ✓Speed Governor
- ✓ Suspension Test
- ✓ Side slip Test
- ✓ Joint Play Test
- ✓ Registration Plates
- ✓ Embossment of Chassis Number & Engine Number
- ✓ Tyres
- ✓ Safety Belts
- ✓ Signaling Devices(Switch), Hazards, Direction Indicators, Stop lights, Side Lights, Number Plate lights
- ✓ Condition of Chassis
- ✓ Front Under Run Protection Devices (FUPD) and Bumper Bars
- ✓ Engine & Transmission Mountings
- ✓ Oil leaks & Cooling System
- ✓ Wings, Wheel Arches and Spray Suppression

Inspection and Certification

VEHICLE TESTING – PRESENT SCENARIO

- Every year a fitness certificate is issued, for the roadworthiness to all public service or commercial vehicles running on the road by the Transport department (RTO office) as per rule 62 of CMVR.

- The fitness tests are presently based completely on visual inspection only.

- There are certain critical parameters related to safety and emissions which need be checked thoroughly by specialised equipment installed only at Inspection and certification lanes called I&C lanes.

VEHICLE TESTING – PRESENT SCENARIO

- Due to absence of I&C lanes network in the country existing vehicles on road pose a great threat to public safety and environment at large.

- The new vehicles are extensively tested from point of view of safety at manufacturer's end. However, in use vehicles continue to run on road without consideration for safety of public or mitigation of pollution in environment.

VEHICLE TESTING – PRESENT SCENARIO

THE SOLUTION IS: Vehicle Test Lane

•The solution to the above problem is to set up network of the Vehicle Test Lanes all over the country where all the vehicles (HCVs, LCVs, MCVs, cars, taxis, 3 wheelers and even 2 wheelers) can be tested for fitness parameters like Brakes, Headlight, Suspension, Alignment, Pollution, Speedometer along with under-pit under carriage inspection apart from visual inspection on scientific parameters.

• All the test data to be stored in the computer data base, to be analysed for corrective actions.

•This will ensure movement of safer and environment friendly vehicles on road besides bringing concept of End of Life of a vehicle on road as prevalent in rest of the advanced world.

Automated Vehicle Fitness Testing Station
A way forward for Setting End of Life of Vehicle

WHY I&C???

- ✓ **<u>Vehicle Testing- Present Scenario</u>: -**Currently, for the roadworthiness to all public service or commercial vehicles running on the road, every year a fitness certificate is issued by the Transport Department(RTO) based on the Visual Inspection only as per Rule 62 of CMVR, which are subjective in nature.

- ✓ Therefore to eliminate the subjectivity in the existing practice and to bring in more objective practice, **Inspection & Certification(I&C) programme** is required to be implemented which includes a combination of both **Visual(having pre-defined guidelines)** and **Automated tests for Brakes, Suspension, Speedometer, Emissions etc**.

- ✓ This I&C programme will ensure safer & environment friendly movement of vehicles on road. Also it will help in bringing the concept of **"END OF LIFE"** of a vehicle on road which is as of now absent in our country.

1. Emission Tests with Automated Equipment

Vehicles	Test	Equipment Required
Diesel	Free Acceleration Test	Opacimeter
Petrol/CNG/LPG	Idle Test	4 Gas Analyzer

2. Safety Tests with Automated Equipment

Test items	Tests	Equipment Required
Speedometer	Speedometer Test	Speedometer tester
Side Slip	Side Slip Test	Side Slip tester
Suspension	Suspension Test	Suspension tester
Service Brakes	Brake test	Roller Brake tester
Parking Brakes		
Headlight	Headlight Test	Headlight tester
Horn	Horn Test	Sound Level Meter

Visual Inspection

- ✓ Visual items to be checked as per Rule 62 of CMVR are Spark Plug/Suppressor Cap/High Tension Cable, Rear View Mirror/Side Mirror, Safety Glass/Windscreen, Horn, Dashboard Equipment, Warning Lights, Windscreen wipers and washers, Speedometer, RUPD, FUPD, LUPD, Fog Lamps, Top Lights, Parking Lights, Number Plate Lights, Stop Lights, Direction Indicators, Hazards Light, Body Marking Lights, Steering Gear, Braking System, Silencer, Reflectors & Reflective Tapes, Headlamp .

- ✓ Visual Inspection to be carried out as per Rule 62 of CMVR with pre defined parameters to be checked e.g. for Windscreen following parameters are to be checked as shown: -

Safety Glass/ Windscreen	Loose fitting	Vision obstruction caused by excessive stickers/object dangles etc.	Scratches on the windscreen
	Screen damage	Fittings loose or damaged	Stone chip damage in the drivers view area i.e. more than 5 mm diameter
	Improper fitment as specified in rules & regulations	Toughened glass is fitted instead of laminated safety glass in the front windscreen	Not of standard marking of laminated safety glass
	Tinted films fitted on the glass		

INSPECTION INTERVAL EXAMPLES IN DIFFERENT COUNTRIES

0/1 = inspection at first registration and then every year
4/2 = inspection 4 years after first registration and then every 2 years

Country	Private cars	HGVs > 3500 kg	Trailers >3500 kg
Japan	0/3/2	0/1	0/1
Singapore	3/2/1	1/1/0.5	1/1/0.5
Belgium	4/1	0/0.5	0/0.5
Denmark	4/2	0/1	0/1
Finland	3/2/1	1/1	1/1
Germany	3/2	1/1	1/1
Great-Britain	3/1	1/1	1/1
Netherlands	4/2	1/1	1/1
Spain	4/2	1/0.5	1/0.5
Israel	0/2	0/1	0/1
New Zealand	0/0.5	0/1/0.5	0/1/0.5

Source: CITA General Questionnaire

MORTH INITIATIVE TO SETUP 10 PILOT I&C CENTERS

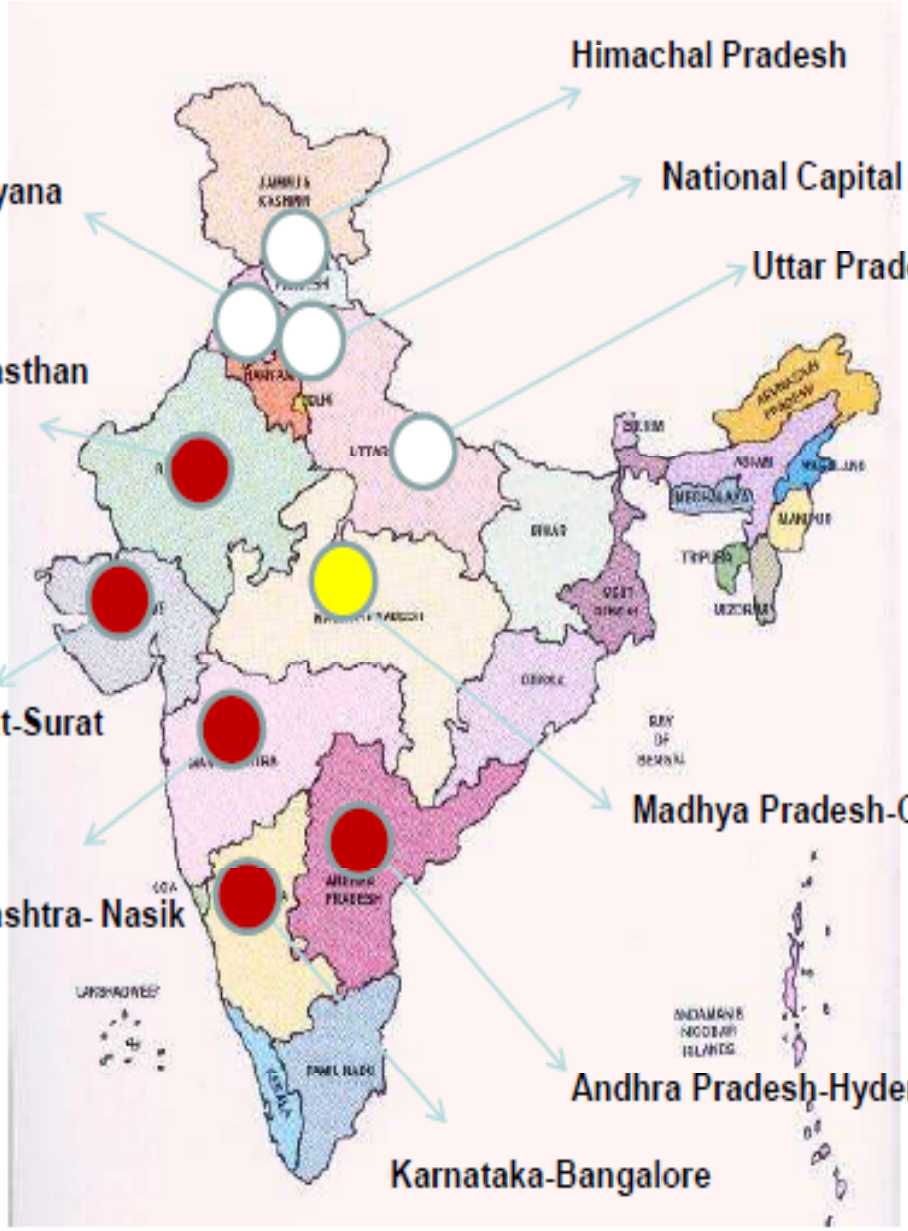
Initiative By MoRTH: -

- ✓ To improve Roadworthiness Safety and emissions for in-use vehicles on Road, **Ministry of Road Transport and Highways(MoRTH)** has initiated a pilot project to setup **10 Inspection & Certification centers(I&C)** in different states in first phase to be implemented by **M/s Rosmerta Technologies Limited.**

- ✓ Locations of the 10 I&C Centers are:-

S.No	State	City	Executive Agencies
1	Maharashtra	Nasik	ARAI
2	Karnataka	Bengaluru	ARAI
3	Rajasthan	Railmagara(Rajsamand)	ARAI
4	Gujarat	Olpada-Surat	ARAI
5	Andhra Pradesh	Malkapur-Hyderabad	ARAI
6	Madhya Pradesh	Chhindwara	SIAM
7	Haryana	Kaneheli- Rohtak	ICAT
8	NCT of Delhi	Jhul-jhuli, Gumanhera	ICAT
9	Uttar Pradesh	Lucknow	ICAT
10	Himachal Pradesh	Taradevi-Shimla	ICAT

10 Model Test Centers to be established in following states

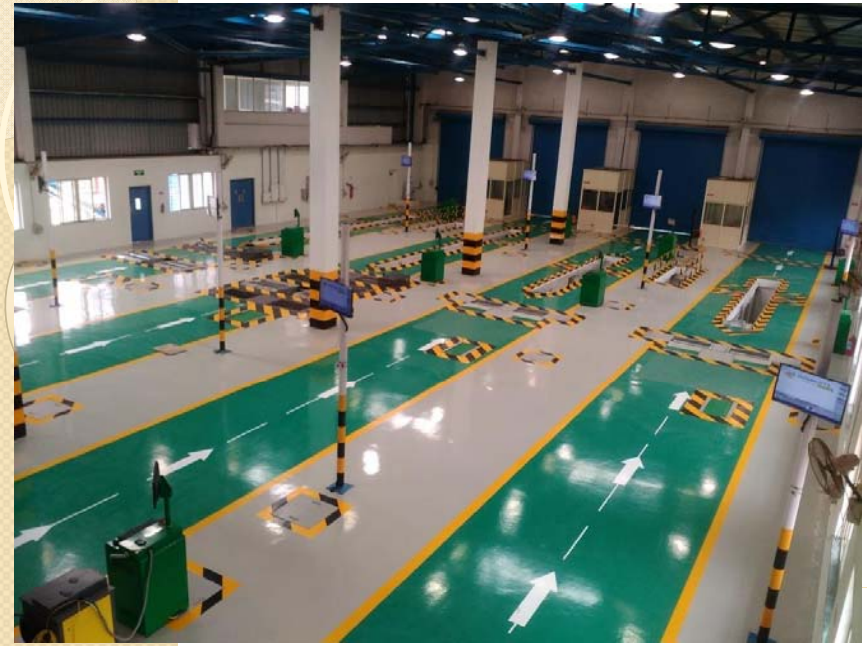


Centers to be facilitated by ARAI

Centers to be facilitated by NATRiP

Center to be facilitated by SIAM

Vehicle Testing Center NASHIK

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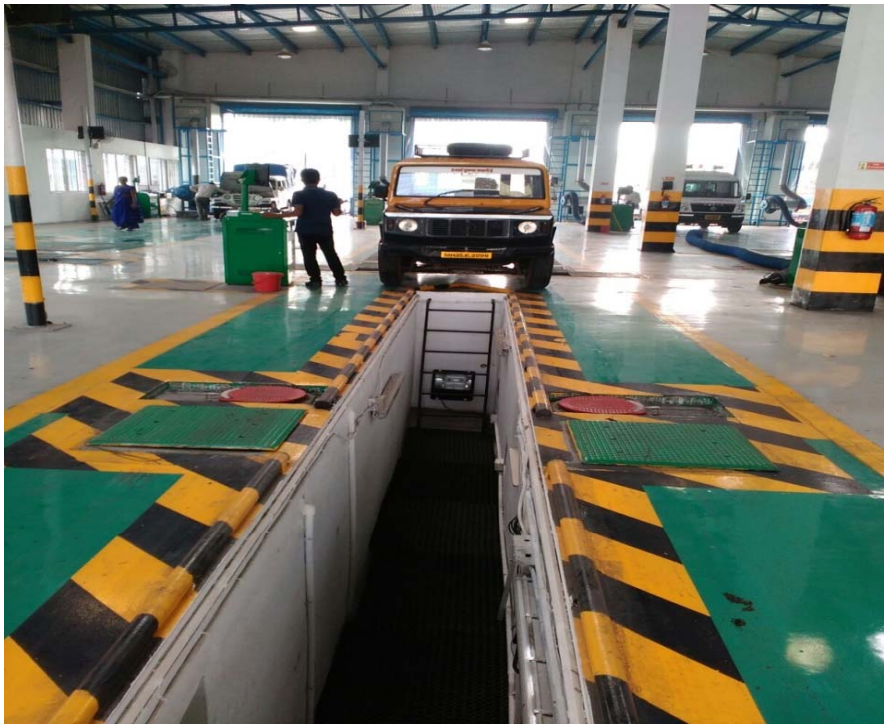


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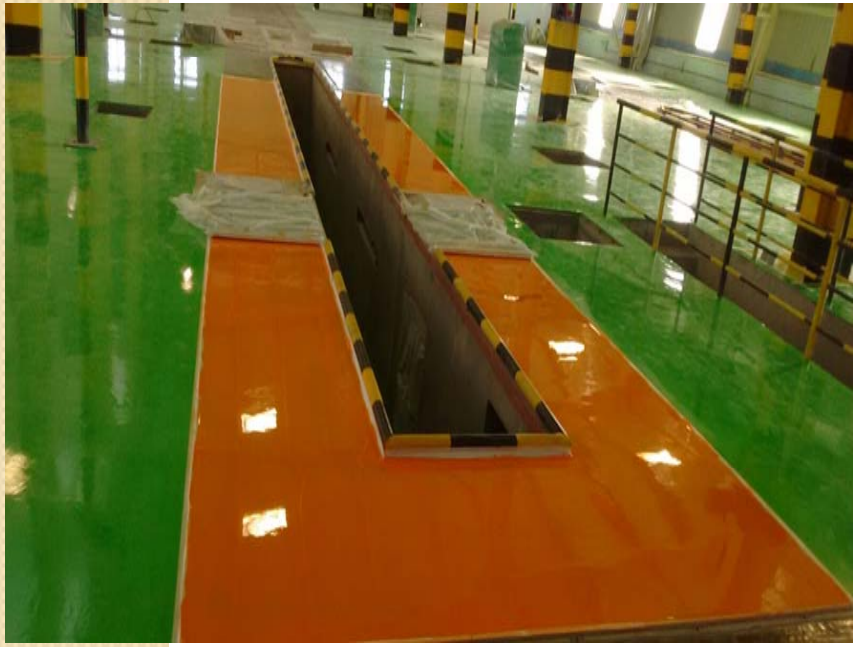
Chhindwara site:



Surat Site

I&C Center- Surat(Gujarat)

ROHTAK SITE

I&C Center- Kanheli(Rohtak)

DELHI SITE

I&C Center- Jhul-jhuli(Delhi)

RAILMAGRA RAJASTHAN SITE

I&C Center- Railmagara (Rajasthan)

I&C Center- Bengaluru

BANGALORE

AWHO(COLONY)
ROAD
DIVDER
ROAD
SHAHEED PATH
GREEN BELT
ROAD
TO KANPUR ROAD
TO RAEBARELY ROAD
BUILDING
BUILDING
TO KANPUR ROAD
BUILDING
BUILDING
TO BIZNOR ROAD
Store, Toilets, Equipment
Services : DG, Rainwater Harvesting, Pump Room, Water Tank, HT/LT etc
HCV
LCV
LCV
1st Floor Office
Supervision
G. Floor Office
Pre-Inspection LCV
Post-Inspection
Post-Inspection HCV
Main Entry
Driver Facility
Security + Others
Rejection / Final Exit
Pre-Inspection HCV
Rejection
Circulation
Pre-Inspection Pre-Paper Work Rejection
Pre-Inspection Post-Paper Work Rejection
Post-Inspection Pre-Paper Work Rejection

Option#3 B

Prince Michael International Road safety Award

Barcelona Award for Automotive Innovation

Golden Peacock National Award for Quality

SAE Award for Environmental Excellence

THANKS FOR YOUR Patience