INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

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Sub. : E2 – Vehicular Engineering and Policy Interventions

Dear Mr Varadan,

As intimated to you, we have undertaken Webinars attended by Road Safety champions from across the world, and as far as E2 – Vehicular Engineering and Policy Intervention is concerned, we have now finalised the Road Safety issues and Action Plan under Vehicle Technologies for Road Safety (Enclosed as Appendix-I). These are enclosed herewith for your perusal and firming up the E2 component of the Road Safety Action Plan 2022.

As far as the second aspect of Policy changes are concerned, please find these enclosed as Appendix-II.

Once you have gone through it, we will hold a meeting to firm up the action plan under E-2. Besides your Team, we will have participation from Ministry of Heavy Industry, a couple of veterans from the Automobile Industry and from SIAM.

I will appreciate, if we could have a date in the week of 7th March 2022 for this Action Plan Committee Meeting – E2.

With warm Regards

Yours truly,

(K. K. Kapila)

***Encls*:**

1. *Appendix-I – Vehicle Technologies for Road Safety (5 Pages)*
2. *Appendix-II-Vehicular Engineering Interventions to be undertaken by the State Governments (4 Pages)*

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NATIONAL ROAD SAFETY ACTION PLAN - 2022

E2 – Vehicular Engineering and Policy Interventions

Sl. No.	Vehicular Issues & Action Plan	Responsibility	Timeframe & Budget
(a)	**Upgrading Vehicle Technologies and In-Vehicle Safety Devices**		
1	**Status:** India as a country still does not have a consumer awareness and information program on vehicle safety. Star ratings as per NCAP programmes as applicable in developed world though applicable for only passenger cars. Through mechanism of NCAP, a vehicle assessed for superior safety features over and above minimum regulatory requirements and thus giving customer an option for purchasing a vehicle having a better safety, depending upon his budget and safety perception. The vehicle safety in India has undergone significant improvements towards **aligning the vehicle safety standards with UNECE standards,** though there are still gaps. **All vehicles produced in the country and brought on road have to comply with safety homologation requirements prescribed under CMVR**. Thus, the Government's road map for improving safety in the new vehicles is appreciable. **Action:** 1.Government should come out with action plan for immediate implementation of **Bharat New Vehicle Safety Assessment Programme (BNVSAP)** which is meant for all category of vehicle and not limit it to Passenger cars only as applicable in NCAPs all over the world. Considering the vehicles plying on Indian roads, it will be critical to assess all vehicles safety rating and inform customers about the same to enable them make informed choices. 2.Expedite action plan for **setting up Post Crash Accident data collection and Analysis centres** across the country for getting inputs for interventions in Indian context. 3. Evaluate **applicability of various active safety features and their relevance in Indian traffic conditions** and introduce **relevant standards** progressively taking into consideration their effectiveness. 4. We should implement UNECE regulations within 4 years of implementation in Europe **after careful evaluation that it is suitable for Indian Conditions.**	**MoRTH**	
2	**All vehicles produced in the country, have to comply with Type approval requirements of homologation prescribed on date under CMVR prior to registration of vehicle by RTO. There is no provision for retrospective compliance or implementation of any fresh rules introduced from time to time. Provisions for retrofitting in a prescribed time frame should be introduced.**	**MoRTH**	

NATIONAL ROAD SAFETY ACTION PLAN - 2022

Sl. No.	Vehicular Issues & Action Plan	Responsibility	Timeframe & Budget
3	**Status:** Seat Belts and Airbags are provided in OE built M1 category of vehicles. In commercial vehicles driver and co-passenger seat are provided with seat belts. However, compromise is done in case of seat belts when body building activity is carried out by roadside body builders. Outside body building activity is also devoid of fitment of Safety wind shield in the vehicle. **Action:** It should be made mandatory to provide seat belts and airbags in all category of passenger as well as commercial vehicles. Provisioning of Rear Seat Belts should also be mandatory by giving 12 months' time from notification. No air bags should be provided on the rear seats, since, if the passenger sitting on the rear seat is not wearing seat belt and if an accident takes place, the passenger is bound to die. We may consider introducing Air Bags for them in next 3-4 years' time. By then I am confident, we will be able to sensitize the public to use rear seat belt.	**States**	
4	**Status:** As per existing rules OE built Buses and Trucks have to comply with the Type Approval requirements as prescribed in CMVR and obtain a certificate of compliance from test agencies given in Rule 126. However in case of body built on drive away chassis by wayside body builders, one has to give only self-certification of compliance to rules, based on which registration is done by RTO. It is here compromise in compliance takes place all over the country and system is also plagued with corruption. A few of the OEMs have started providing the complete bus/truck including the bus/truck body along with the chassis, which are as per the standards developed in the country (for the truck and bus body codes). However, in the interest of allowing the local industries for building bus/truck bodies, those are also not completely stopped. Accordingly, there are many such non-standard bus/truck bodies are built on the chassis procured from OEMs, and these bus/truck bodies are actually not built as per the standard (bus/truck body codes) provided by MoRTH. **Action:** Government should not make any distinction in compliance to rules for OEs and Wayside Body builders under the garb of relaxation for MSMEs at the cost of safety in commercial vehicles, mainly responsible for most of fatal accidents.	**MoRTH**	

(b)	**Enforcement of Vehicle Safety Measures for the In-Use Vehicle Fleet**		
1	**Status:** Government has issued guidelines for adoption of FUPD, RUPD and SUPD as well as other safety requirements for the new commercial vehicles being produced by OEMs in the country. But, it is seen that most vehicles of the existing in-use vehicle fleet do not comply to all the motor vehicle safety norms as specified in the Central/State Motor Vehicle Rules. A detailed survey (and also campaign) of all motor vehicles are to be done across all districts by each RTO, of the districts of the State for checking the compliance to the vehicle safety norms by the in-use vehicle fleet in terms of underrun protection devices, fixing of conspicuity tapes for marking on the body, reflectors in the non-motorised vehicles and tractor-trolleys, brake lights and the rear-view mirrors, and several others. Trucks/buses moving slow or parked on roadside have been the causes of large number of accident with fast moving other vehicles. **Action:** Carry out a State wide programme to be implemented by RTOs for enforcing the following: • Front, Rear and Side Underrun Protection Devices (FUPD, RUPD and SUPD) for all commercial vehicles. • Retro-reflective conspicuity tape fixation on all sides of commercial vehicles. • Retro-reflective tapes/reflectors for bicycles, tractor-trolleys and animal-drawn vehicles. • Brake lights, indicator lights and rear-view mirrors of all bv vehicles, and especially the commercial vehicles. • Govt. has ensured fitment of Seat Belts and air bags in vehicles but use of seat belt is yet to be made mandatory all over the country. Besides on highways at least, wearing rear seat belts should be made mandatory. Needless to say efficacy of airbag is doubtful in case seat belt is not worn. • Wearing of helmet by two wheeler rider as well as pillion riders should be mandatory all over the country. If the vehicle is non-compliant to any of these, as per checking along the major corridors in the districts, the RTOs will have the arrangements ready (near the point, where the checking/enforcement is going on, through a competent private party or even an OEM) for all these requirements and will get these fixed/corrected as required, and charge the full cost of it along with a reasonable penalty in a time bound manner. (Conspicuity tapes: AIS093 for truck body and tractor-trailer; and AIS052 for the bus body. Similarly AIS090 for the bicycles and retro-reflective reflectors on non-motorised vehicles).	**MoRTH** **State Govts.**	
2	**Status:** Government of India in its road map for upgrading technology in motor vehicles in the country has adopted the Antilock Braking System (ABS) for the two-wheelers from April 2018. But, there is a huge fleet of in-use 2-wheelers (scooters, motorcycles and mopeds, etc), which are without such advanced features of ABS in the in-use two-wheeler vehicles. The ABS feature would prevent skidding while braking at high speed whereby the driver loses control of steering, resulting in fatal accidents.	**MoRTH**	

	Action: The Government should make all out efforts, including incentives for retrofitment of ABS to the existing in-use fleet of two-wheelers within a period of two years, from the date of effectiveness for new vehicles.		
3	**Status:** The drunk driving is one of the most serious problems for road safety. The enforcement system has limitations of various kinds (non-availability of breathalyser in each police station) to prevent all road accidents due to drunk driving. Therefore, a self-enforcing system is always the best system for achieving the long-term objectives of preventing or eliminating such hazards rom road traffic. Accordingly, the available technology Alcolock must be made available in all motor vehicles for assessment of the BAC of the driver. **Action:** The Government should make an appropriate road map for provisioning of Alcolock mandatory, providing legal provision for it in all new motor vehicles manufactured and sold in India. Besides, for all the existing motors by retrofitting of Alcolock. There should be a timeline of one to two years for retrofitment of Alcolock to all existing in-use fleet of motor cycles/ scooters, etc.	**MoRTH**	
4	**Status:** A large number of accidents in the country are due to fatigue and sleep (drowsiness) while driving, especially for the trucks travelling on highways during night. A significant number of accidents are taking place during the early hours of the day (after midnight) due to fatigue and drowsiness felt by the driver. While the regulation on driving hours and stipulated rest period etc. are important, there are already existing technologies to identify such condition of the driver through special cabin cameras for providing warning to the driver or even for immobilising the vehicle. **Action:** In India, the trucks operating on highways during the night must be equipped with such system to alert the driver for necessary precaution and for advising him to take rest, since, drivers' fatigue plays an important role in the accidents. For this there has to be a check on the hours of driving done for which one must install digital tachograph in commercial vehicles/professional drivers.	**MoRTH**	
(c)	**Vehicle Inspection & Maintenance Regime (Fitness Certification)**		
1.	**Status:** At present the commercial vehicles have the regulation for fitness certification after every 12 months. The fitness certification of commercial vehicles also is not a full-proof system, as can be seen in terms of conditions of the commercial vehicles operating on Indian roads. From the examination of the commercial vehicles involved in accidents, it is very clear that the certification regime is a very inappropriate system not meeting the purpose, either for lack of rigor in checking or unfair dealings due to completely manual methods, or even inadequate facilities available at these certification centres. Consequently, a large fleet of unsafe commercial vehicles are operating on the road with poor brakes, inappropriate lights, and other mechanical deficiencies, which are highly hazardous for themselves as well as all others. **Action:**	**MoRTH** **State Govts.**	

	Under CMVR it is now made mandatory to set up a large number of vehicle inspection centers all over the country for vehicle inspection and certification. For the purpose a new chapter XI has been introduced in CMVR vide GSR 652(E) dated 23rd Septenber,2021. All States are being asked set up these centres in an expeditious manner. There is however no central control mechanism to oversee this activity. In UNECE they have brought out a specific directive to oversee and carry out central and state audit to maintain uniformity. India should also adopt a similar practice. As otherwise each state is likely to follow its own system which may ultimately jeopardise the entire effort once the damage is done.		
2	**Status:** The country does not have a prevailing law for inspection and maintenance of private vehicles at regular interval for a certification of fitness or road worthiness. The private passenger vehicles are taxed and certified for 15 years without any requirement for any inspection and certification in between before expiry of 15 years. Therefore, it has been observed that a very large proportion of such vehicles also have glaring deficiencies in terms of brakes, lights and other mechanical functions of the vehicle (as seen from the reports of the vehicle inspection for those vehicles which met with accidents). This establishes that very large number of private passenger vehicles are also not maintained properly to remain safe during the 15 years registration life. Most of the developed world has a yearly certification for the private passenger vehicles also for compliance to standard safety requirements. **Action:** It is necessary that the private passenger vehicles also should go through a certification process for compliance to the requirement of safety once every 2 years. Such inspection also should be automated and with minimum human interventions, so that a true safety assessment is obtained, and deviations can be corrected for certification. For this I&M service system, the service centres of the dealers of the Vehicle Manufacturers may be authorised (with verification of their facilities and trained manpower, etc on a regular basis), if they have the automated systems for inspection.	**MoRTH**	
(d)	**Scrappage Policy**		
1.	**End of Life of Vehicle:** "'End of Life Vehicle' means any vehicle, – (a) which is no longer validly registered; or (b) of which registration has been cancelled under Chapter IV of the Act; or (c) which has been declared unfit after undergoing test or re-test as specified under the provisions of this chapter; or (d) which is self-declared by the legitimate registered owner as a waste vehicle due to any circumstances that may arise from fire, damage, natural disaster, riots or accidents."	**MoRTH**	

	Under Section 41 of MV act, life of certification of vehicle is prescribed as 15 years subject to further extension as may be prescribed by central Govt. In nutshell End of Life of a vehicle will depend upon fitness certificates being issued by automated test centres. Going through the norms prescribed for testing under GSR 652 (E0, most of the test are visual tests except brake test, speedometer test, emission test and head light beam test. **Suspension, side slip test,** noise test though mentioned have no limits prescribed. There are hardly any performance related test including body structural integrity, drivability and manoeuvrability etc. List for automated fitness testing matrix is drawn for different purposes and not evaluating the vehicle with a perspective of end of its life. **This matrix has to be specifically redrawn on priority for immediate introduction**		
2.	**Provision of training on Trauma Care in the Driving Course curriculum** During the course of giving training on driving, it should be made mandatory to impart training on Trauma care. This will ensure sensitivity in drivers' community to offer timely assistance to any accident victim in the golden hour. To begin with, we will cover all commercial vehicle drivers. All existing drivers must undertake this training within next 3 months. A notification to this effect may be issued forthwith.	MoRTH	
3.	**Introduction of Air Suspension in Rear axle in buses.** **Status** - As of now most of the buses of all categories I.e. city buses, inter city buses and long distance buses are built on drive away chassis which are basically designed and manufactured for building goods carrier trucks, the suspension system used consists of leaf springs and sometimes adding torsion bars. The bus bodies built on such chassis usually have large overhangs. Such a configuration results into exceptional vertical jolt especially to the passengers occupying last row of seats when vehicle is driven on speed breakers, ditches or potholes on the road, which are abundant on Indian roads. Such a jolt though not fatal, is likely to cause serious injuries to spinal column crippling the person. Such injuries are not captured as an accident unless specific complaint is lodged which is seldom done. **Intervention- all buses/ passenger carriers must have air suspension at least for rear axle. Bus code is to be suitably modified to add this India specific requirement.**	MoRTH	

Vehicular Engineering Interventions to be undertaken by the State Governments

The Engineering of Vehicles, the second aspect of 5 Es is critical in the mission of Road Safety. Modifications to vehicles, absence of mandatory safety features, absence of supporting policies, etc., suggests that lot of efforts are required in this area. No doubt, Government of India has taken positive steps since last two decades for improvement in safety standards of the vehicles and many such in-vehicle safety devices are parts of each vehicle produced in the country today. However, to make the vehicle affordable to general public, the basic models are produced with very limited safety parameters, which are mandatory for selling them in the country. On the argument of marketability to larger population, some of the advanced and important in-vehicle safety features are provided in the high-end models at higher cost. Also, most of these advanced features, made mandatory for motor vehicles in India, are provided in the new vehicles, while a huge fleet already in use are required to be retro-fitted with the new features of safety urgently. The IRF-IC, as part of the mission for demonstration safe corridor projects, is working with the State Governments to make effort by adopting policies for retrofitment of the safety features in the vehicles as demanded by CMVR. These safety features for existing fleet have been summarised, for which the key interventions are required and those are as proposed to work on as part of the validation programme actions under 5 Es.

The International Road Federation (GPC)'s – India Chapter (IRF-IC) has been pursuing the mission of improving Road Safety in India since over a decade. As is well known, India has the worst road safety performance globally with road accident fatalities of over 150,000 and injuries, both minor and those leading to permanent disabilities, are about 500,000. As part of multiple efforts across the country by various organizations, IRF-IC has decided to take up seven roads with worst accident records (fatalities and injuries) in top Seven States in the country (with highest number of accidents and fatalities during the last three years), as demonstration projects to showcase that road safety can be improved by attending to 5 (five) Es of road safety, in a coordinated way following the requirements of globally acclaimed Safe System Approach.

Under this component of action for Engineering of Vehicles, a series of actions and policy interventions are required from the states to ensure that the vehicles that are used in the state, and particularly along the project corridor are compliant to all safety norms and regulations in the country. Therefore, IRF-IC proposes to take up these actions by persuasion with the State Government and these policy interventions are listed here as under:

Policy Interventions

1. The States are requested to enact **Good Samaritan Law**. A copy of this law enacted by Karnataka has already been shared with the Chief Ministers by the Hon. Minister Gadkari ji as an annexure to his letter dated 8th April 2021 and followed through by

the President (Emeritus) of International Road Federation Mr. K. K. Kapila vide letter dated 13th April 2021 to the Chief Ministers of States, including the 7 project states. The contents of the Good Samaritan Law can be downloaded from the website mentioned below :

https://savelifefoundation.org/wp-content/uploads/2016/11/Karnataka-Good-Samaritan-and-Medical-Professional-Protection-and-Regulation-during-Emergency-Situations-Bill.pdf

2. All bigger commercial vehicles (mainly trucks and buses) passing through the State to be advised to retrofit **Front Underrun Protection Device (FUPD), Side Underrun Protection Device (SUPD) and Rear Underrun Protection Device (RUPD)** to avoid fatal and serious injury accidents, when the smaller vehicles go under the bigger one in collision. Such commercial vehicles (in-use existing fleet) is to be given a period of one month to have them fitted with FUPD/SUPD/RUPD. After this time limit, if any vehicle does not have these fitted, it may be impounded and then got retrofitted with the protection devices, and to be released only after charging them twice the amount of the cost, which should include administrative expenses as well. All new vehicles are already produced with all these fitted by the OEMs as per the motor vehicle rules.

3. The Conspicuity Tapes or retro-reflective tapes/reflectors conforming to **AIS 090** standards to be affixed on bicycles as per **IS 10613,** and also on all commercial vehicles plying during the dark hours, especially during the night. Similarly, **AIS 093** for Truck bodies and trailers and **AIS 052** for the bus bodies for compliance to safety requirements. These are urgent requirements to bring down accidents involving these vehicles plying on high speed roads. The bicycles are not visible when they are mixing with the high speed traffic, especially in the night, and often get hit by motor vehicles.

   With tail lights not functioning, the trucks moving slow or parked along roadside are generally hit by other fast moving vehicles, especially on highways. As per CMVR the commercial vehicles are supposed to be affixed with conspicuity tapes (white in the front, yellow on sides and red in the back) showing the dimension (by fixing the tapes at the edges of the body) for making the vehicle distinctly visible in the dark.

   Similar provisions should be introduced to include tractors and tractor trolleys for using retro-reflective tapes (just as in any other commercial vehicle) as per CMVR as all such vehicles also travel on the highways carrying agricultural produce at night. A time line of 30 days should be given to all such vehicles for compliance, failing which the vehicle will be impounded and necessary retro-reflective tapes or reflectors will be got fixed and released only after charging them a penalty of double the cost besides the impounding fee.

4. At present, the road accidents and road fatalities to two-wheeler riders is about 40% of total road accidents in the country. There are base level cars available in the country and to promote such base level cars, the Government may consider reduced or exemption of excise duty on such low priced base level motor vehicles. Also, promotion of interest free loan to Govt. Servants as well as PSU employees will encourage a large number of persons to move from Scooter/Motorcycle to this base level car, which can carry the entire family safely as compared to a two-wheeler, which actually is an unsafe travel mode for the family.

5. Existing **Driving Licences** to be linked with **Aadhar Cards**. A brief description of this is given below :

   - For want of central data repository, there is no official data available for number of driving license holders in India. It is estimated that every year over 1.2 crore driving licenses are issued in India. These include both fresh licenses and renewal of licences for all types of motorized vehicles.
   - In India for financial and other important transactions, the driving license (DL) is accepted as personal POI (proof of identity) and POA (proof of address). On the down side, in using DL as POI has missing bio-metrics as well as no check on duplicity of licenses. To overcome these deficiencies, MoRTH has proposed to create a provision to store Aadhar information in the chip of standardized Smart Card DL. For already issued digitalized DLs, MoRTH and State Transport Department Web-sites will also have facility to DL holders to voluntarily link Aadhar number with DL. This is going to eliminate duplicate licenses.
   - The linking of Aadhar number with DL is possible only where DL data is digitalized. Digitalization of DL issuance is a recent phenomenon and most of the DLs are manually created by various Indian States and in different formats. It is estimated that across India, there are over 30 Crore driving license holders and there is no electronic data available for most of them. Unscrupulous elements misuse this deficiency to get multiple DLs to escape penal action by enforcement agencies. Due to non-digitization, enforcement agencies are also unable to track/analyze the driving related offences and contemplate corrective measures to enhance road safety.
   - To validate all DLs for authenticity and to remove duplicity, it is important that all **DLs are linked with Aadhar**. Because of multiplicity of DL format and non-digitization, it is a huge task but not difficult. For all new DLs and for all DLs reporting for renewals, MoRTH has already proposed to link such DLs with Aadhar data.

- There are basically two types of DLs, viz., Transport (commercial) and non-Transport (non-commercial). Commercial DL holders have to get their DLs renewed every three years. Validity of non-Transport DL ranges from 20 years to 5 years depending upon the age of the DL holder.
- To fast track the linking of Aadhar Card with Driving Licences, a campaign to spread traffic and road safety awareness must be started and all DL holders must be covered in this. A **two-hour classroom session** can be given and during the session, the Aadhar and **DL data of participants** can be collected and linked at the site itself. This class room training shall be based on the perception of risks in the driving task and about how to minimize such risks.
- All drivers by law shall be advised to carry both Driving Licence and Adhar Card while driving. In the event of a **fine** for any **offence** whatsoever by the traffic police, RTO's officials or any other Government agency, the Authority imposing the fine should simultaneously **take photo of both the Driving Licence and the Aadhar Card.** This will fast track this linkage.

6. Focus on Sensitivity of Truck and Bus Drivers : To make Truck and Bus drivers more sensitive, all Truck and Bus Drivers must carry a **Family Photograph** on the **Dash Board** of their vehicles.
7. **All heavy duty vehicle drivers** to be trained in **first aid trauma care training**. In the event of an accident, a truck or bus is likely to pass the accident site within minutes and if the driver is trained in first aid trauma care, he will be able to provide assistance to the accident victim within the Golden Hour and save life. IRF-IC will be undertaking this exercise on the selected stretches to begin with.
8. There are a whole set of mandatory safety features of the vehicles, which are found to be deficient or even missing in many of the in-use existing fleet. Some of these, as observed in existing fleet are given here.

- Fitment of proper **side and rear view mirrors**; functioning of **head and tail lights,** and also the lights on **number plates**.
- Safety Belt to be **retrofitted** in all passenger cars (even in the oldest car being used as part of the existing fleet) as well as buses.
- A vigorous campaign to be launched to provide **anti-lock braking system (ABS)** on existing motorised two-wheeler vehicle as it is already mandated for new vehicles. The ABS feature would prevent skidding while braking at high speed whereby the driver loses control of steering, resulting in fatal accidents.
- Alcolock to be provided in all four wheelers by making legal provision for it to reduce drunken driving.