

LIST OF PARTICIPANTS

Sr. No.	Name	Designation/Office/ E-mail ID/ Phone Number
1.	Shri Priyank Bharti (Chairman)	Joint Secretary (MVL, Toll & IT), MORTH jspb-morth@gov.in
2.	Dr. Piyush Jain	Director, MORTH director-morth@gov.in
3.	Shri K. C. Sharma	Superintending Engineer (Tpt), MoRTH kcsharma1965@gmail.com
4.	Shri B. P. Umashankar	Additional Commissioner Transport Karnataka
5.	Shri Vinod Kumar	Joint Commissioner Transport Rajasthan
6.	Shri Khatri Sanjay	
7.	Shri S. S. Chauhan	Dy. Commissioner (OPS)-Transport Dept. Govt. of Delhi
8.	Shri N. V. Marathe	Officiating Director ARAI director@araiindia.com Mobile: 9975581060
9.	Shri A. A. Badusha	ARAI badusha.apx@araiindia.com Mobile: 9975581060
10.	Shri Vikram Tandon	ARAI tandon.apx@araiindia.com Mobile: 96658 86222
11.	Shri Kamalesh B. Patil	ARAI patil.apx@araiindia.com Mobile: 9922508975
12.	Shri Vishal P. Rawal	ARAI rawal.apx@araiindia.com Mobile: 9404953685
13.	Shri Pratik Nayak	ARAI nayak.apx@araiindia.com Mobile: 8310739815
14.	Capt. (Dr.) Rajendra B. Saner- Patil	Director CIRT director@cirtindia.com
15.	Shri S. N. Dhole	CIRT sndhole@cirtindia.com Mobile: 8055337237

16.	Shri M. M. Pathak	CIRT mpathak@cirtindia.com Mobile: 9970435909
17.	Shri J. J. R. Narware	Director CFMTTI fmti-mp@nic.in
18.	Shri V M Dhanasekar	GARC vm.dhanasekar@garc.co.in Mobile: 9842531134
19.	Shri Dinesh Tyagi	Director ICAT director@icat.in Mobile: 9958887700
20.	Mrs. Pamela Tikku	ICAT pamela.tikku@icat.in
21.	Ms. Vijayanta Ahuja	ICAT vijayanta.ahuja@icat.in Mobile: 9871228855
22.	Capt. V. V. Ratnaparakhi	ASRTU ed.asrtu@gmail.com Mobile: 8369875870
23.	Shri R. R. Singh	BIS ted@bis.org.in Mobile: 9873156762
24.	Shri K. K. Kapila	IRF cmd@ietonline.com Mobile: 9810104043
25.	Dr. Anoop Chawla	IIT Delhi
26.	Shri Shrikant Marathe	Former Chairperson AISC
27.	Shri P. K. Banerjee	SIAM ED@siam.in Mobile: 9999179876
28.	Shri Amit Kumar	SIAM amit@siam.in Mobile: 9971239516
29.	Shri Diwit Prajapati	SIAM diwit@siam.in Mobile: 9718710600
30.	Shri V. Faustino	Ashok Leyland Ltd. (SIAM) faustino.v@ashokleyland.com Mobile: 9042634919

31.	Shri R. Narasimhan	Bajaj Auto Ltd. (SIAM) rnarasimhan@bajajauto.co.in Mobile: 9890500301
32.	Shri Arvind V. Kumbhar	Bajaj Auto Ltd. (SIAM) avkumbhar@bajajauto.co.in Mobile: 9890500558
33.	Shri Dharmendra Singh	BMW India Pvt. Ltd. (SIAM) Mobile : 8800993790
34.	Shri A. S. Ravikumar	Daimler India (SIAM) ravikumar.samuthiram@daimler.com Mobile: 8056014998
35.	Shri Dyaneswaran P	Diamler India Commercial Veh. Pvt. Ltd. (SIAM) Mobile : 8050015004
36.	Shri Kedar Kshirsagar	FCA India (SIAM) Mobile : 7875443869
37.	Shri Girish Kadolikor	Force Motors Ltd. (SIAM) Mobile : 9922112394
38.	Shri Pankaj Kumar Karn	Ford Motors Pvt. Ltd. (SIAM) Mobile : 9958205910
39.	Shri R. Ganesh	Ford India (SIAM) Mobile : 9840202478
40.	Shri Harjeet Singh	Hero Moto. Corp. Ltd. (SIAM) harjeet.singh@heromotocorp.com Mobile: 9810005910
41.	Shri Feroz Ali Khan	Hero Moto. Corp. Ltd. (SIAM) feroz.khan@heromotocorp.com Mobile: 9560842022
42.	Shri S. Muthu Kumar	Honda Car (R&D) India. Ltd. (SIAM) muthu_kumar@n.t.rd.honda.co.jp Mobile: 9599009711
43.	Shri Suraj Agarwal	Honda Motorcycle & Scooter India Pvt. Ltd. suraj.agarwal@honda2wheelersindia.com Mobile: 9810296023
44.	Shri Vipin Sharma	Honda Motorcycle & Scooter India Pvt. Ltd. vipin.sharma@honda2wheelersindia.com Mobile: 7042396600
45.	Shri Anantha Krishna S. L	Hyundai Motor India Ltd. (SIAM) ananth@hmil.net Mobile: 9618171577

46.	Shri Alauddin Ali	Jaguar Land Rover India Ltd. (SIAM) Mobile : 9930060954
47.	Shri Devinder Tangri	Mahindra & Mahindra Ltd. (SIAM) Mobile : 8237011247
48.	Shri V. G. Kulkarni	Mahindra Truck and Bus Division (SIAM) vgkulkarni@mahindra.com Mobile: 9860360890
49.	Shri C. V. Raman	Maruti Suzuki India Ltd. (SIAM) cv.raman@maruti.co.in Mobile: 9811811393
50.	Shri Alok Jaitley	Maruti Suzuki India Ltd. (SIAM) alok.jaitley@maruti.co.in Mobile: 9810793640
51.	Shri Deepak Sawkar	Maruti Suzuki India Ltd. (SIAM) deepak.sawkar@maruti.co.in Mobile: 9811818162
52.	Shri Anoop Bhat	Maruti Suzuki India Ltd. (SIAM) anoop.bhat@maruti.co.in Mobile: 9810502687
53.	Shri Gururaj Ravi	Maruti Suzuki India Ltd. (SIAM) gururaj.ravi@maruti.co.in Mobile: 9643824621
54.	Shri Rajendra Raut	Maruti Suzuki India Ltd. (SIAM) Mobile : 8860388876
55.	Shri Shrikant Deshmukh	Mercedes Benz India Pvt. Ltd. (SIAM) shrikant.deshmukh@daimler.com Mobile: 9881157780
56.	Shri Nikhil Desai	Mercedes Benz India Pvt. Ltd. (SIAM) nikhil.desai@daimler.com Mobile: 9922009554
57.	Shri Rajendra Khile	Renault Nissan India Pvt. Ltd.(SIAM) rajendra.khile@rntbci.com Mobile: 8805971055
58.	Shri Venu Suresh C	Royal Enfield (SIAM) Mobile: 8928063892
59.	Shri Vijayaraj S	Scania CV India Pvt. Ltd. (SIAM) Mobile : 9900058820
60.	Shri. Milind K. Jagtap	Skoda Auto Volkswagen India Pvt. Ltd. (SIAM) milind.jagtap@volkswagen.co.in Mobile: 8390907968


61.	Shri Makarand Brahme	Skoda Auto Volkswagen India Pvt. Ltd. (SIAM) makarand.brahme@skoda-vw.co.in Mobile: 8554992375
62.	Shri Avinash Khot	Suzuki Motorcycle India Pvt. Ltd. (SIAM) khot.avinash@suzukimotorcycle.in Mobile: 9689938990
63.	Shri Yogesh Kumar Dinkar	Suzuki Motorcycle India Pvt Ltd. (SIAM) Mobile : 9810434267
64.	Shri Gaurav Singh	Suzuki Motorcycle Ind. Pvt. Ltd. (SIAM) Mobile : 7042446299
65.	Shri Mohit Gupta	SML Isuzu Ltd. (SIAM) mohit.gupta@smlisuzu.com Mobile: 7087083491
66.	Shri P. S. Gowrishankar	Tata Motors Ltd. (SIAM) p.gowrishankar@tatomotors.com Mobile: 7276026129
67.	Shri Sharad Bhole	Tata Motors Ltd. (SIAM) sharad.bhole@tatomotors.com Mobile: 7276098042
68.	Ms. Namrata Deb	Tata Motors Ltd. (SIAM) Mobile: 7276053169
69.	Shri M. S. Anandkumar	TVS Motor Company Ltd. (SIAM) ms.anandkumar@tvsmotor.com Mobile: 9003922814
70.	Shri Yuko Kobayashi	Toyota Kirloskar Motor Pvt. Ltd. (SIAM) yuko-kobayashi@toyota-kirloskar.co.in
71.	Shri Raju M	Toyota Kirloskar Motor Pvt. Ltd. (SIAM) rajum@toyota-kirloskar.co.in Mobile: 9686105309
72.	Shri Nishant Kalra	Toyota Kirloskar Motor Pvt. Ltd. (SIAM)
73.	Shri Vijeth R. Gatty	Toyota Kirloskar Motors Pvt. Ltd. SIAM) Mobile : 9449788072
74.	Shri Dinesh G. M	Toyota Kirloskar Motor Pvt Ltd. (SIAM)
75.	Shri Shyam Bute	VE Commercial Vehicles Ltd. (SIAM) Mobile : 9993058881
76.	Shri S. R. Hariharan	Volvo Trucks (VECV)(SIAM) srhariharan1@volvo.in Mobile: 8861758585
77.	Shri Pawan Kumar	India Yamaha Motors (SIAM) pawank@yamaha-motor-india.com Mobile: 9811664409


78.	Shri R. P. Vasudevan	SDF India (TMA) r.p.vasudevan@sdfgroup.com Mobile: 9364496096
79.	Shri Philip Koshy	John Deere Equip. Pvt. Ltd. (TMA) Koshyphilip@JohnDeere.com Mobile: 9822545186
80.	Shri Vivek Gupta	Mahindra & Mahindra Ltd. (TMA) gupta.vivek3@mahindra.com Mobile: 9840064188
81.	Shri Uday Harite	ACMA usharite@acma.in Mobile: 8149099959
82.	Ms. Seema Babal	ACMA Seema.babal@acma.in Mobile: 9873369693
83.	Shri P. Venugopal	Brakes India Ltd. (ACMA) p.venugopal@brakesindia.com Mobile: 9841291972
84.	Shri Noel Peters	Denso International India Pvt. Ltd. (ACMA) neol_peters@denso.co.in Mobile: 8448486418
85.	Shri Suyash Gupta	Indian Auto LPG Coalition suyash@iag.org.in Mobile: 9811156647
86.	Shri Balraj Bhanot	Advisor IAC Mobile : 9810094896
87.	Shri Amit Shah	-
88.	Shri Tom Thomas	ITTAC / ATMA
89.	Shri V. K. Misra	ATMA
90.	Shri T. C. Kamat	MRF Tyres Ltd. (ITTAC) tckamath@gmail.com Mobile: 9884454329
91.	Shri K. V. Krishnamurthy	ICEMA techadvisor@i-cema.in Mobile: 9880402616
92.	Ms Indira Menon	Asst. General MAnager FADA
93.	Mrs. Rashmi Urdhwareshe	Past Director ARAI


94.	Shri Karthik Sarma	-
95.	Shri Mandeep Singh	-
96.	Shri Sudhakar Santosh	-
97.	Shri Selvarathinam Vivekraj	-
98.	Shri Sandeep Garg	-
99.	Shri Krishan Sonalika	-
100.	Shri Venkatesh Ganesaperumal	-
101.	Shri Ganesh Ramakrishnan	
102.	Shri K. P. Singh	
103.	Shri Vishal Shrivastava	
104.	Shri Rohit S. A	


ARAI® Progress through Research			CMVR-TSC – Agenda 2 (i)		
# Status of AIS / IS standards notified under CMVR					
<ul style="list-style-type: none"> • Secretariat prepared a status sheet of the existing standards notified under CMVR. • The subject was further discussed in 63rd and 64th meeting of AISC and a special meeting held along with BIS. • Subsequently, all AIS standards notified under CMVR are categorized into following priority lists based on which conversion to IS standards is proposed. 					
Priority	Remarks	Number of Standards			
Priority 0	AIS standards which are already converted to IS standards and which now need to be taken up for implementation through CMVR-TSC / AISC.	10			
Priority 1	List of AIS standards which can be taken up for conversion by BIS immediately.	65			
Priority 2	List of AIS standards for which conversion can be taken up after issues such as technology maturation & crosslinking/cross-referencing of AIS standards are resolved.	39			
Priority 3	List of AIS standards which are considered complex to convert considering administrative requirements sitting in these standards. AISC will examine how to resolve these problems after the higher priority conversions as indicated above are completed.	22			
Priority 4 (no action at the moment)	List of AIS standards which are primarily administrative in nature and are not required to be converted to IS.	5			

ARAI® Progress through Research			CMVR-TSC – Agenda 2 (i)		
1) Priority 0: AIS standards converted to IS standards and which now need to be taken up for implementation through AISC.					
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark	
1	AIS : 003	Starting Gradeability - Method of Measurement and Requirements	Rule 124(1), Table Sr. No. 23	IS 13988 : 2014 is published.	
2	AIS : 011	Windscreen Wiping System for 4 W other than M1 Category of Vehicles	Agri Tractor Rule 101(2-B)	IS 15802 : 2008 is published.	
3	AIS : 018	Speed Limitation Devices – Specifications.	Rule 118	IS 14382:2014 is published.	
4	AIS : 023	Seats, their Anchorages and Head Restraints for Passenger Vehicles of Categories M2, M3 and Goods Vehicles of Category N - Specifications.	Rule 125 (6), (7)	IS 16903 : 2018 is published.	
5	AIS : 029	Survival Space for the Protection of the Occupants of the Cab of a commercial Vehicle	Rule 124 (1) (35)	IS 16904 : 2018 is published.	
6	AIS : 031	The Strength of Superstructure of Large Passenger Vehicles	Rule 124(1), Table Sr. No. (36)	IS 16332 : 2017 is published.	
7	AIS : 095	Requirements for Metallic Fuel Tanks of Automotive Vehicles	Rule 124 (1), Table Sr. No. (7)	IS 16219:2014 is published.	
8	AIS : 103	Spray-Suppression Systems for 2W Motor Vehicles	Rule 124 (1), Table Sr. No. (48)	IS 16712 : 2018 is published.	
9	AIS : 140	Intelligent Transportation Systems (ITS)	Rule 90(4)	Notification for implementation of IS 16833:2018 is adopted in CMVR-TSC.	
10	AIS : 150	Uniform Provisions Concerning the Approval of Vehicles of Categories M2, M3, N and T with regard to braking	Rule 125-C (7)	IS 11852:2019 is published.	

 CMVR-TSC – Agenda 2 (i)				
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
1	AIS : 013 (Rev.1)	Spray-Suppression Systems	Rule 124(1), Table Sr. No. 33	Recommended
2	AIS : 021	Field of Vision of Motor Vehicle Drivers for M1 Category	Rule 124(1), Table Sr. No. 34	Recommended
3	AIS : 022	Advance – Warning Triangles – Specifications.	Rule 138 (4)	Recommended
4	AIS : 024 (Rev.1)	Safety and procedural requirements for type approval of CNG/Bio-CNG/LNG operated vehicles (DEDICATED, BI-FUEL & DUAL FUEL)	Rule 115 B	Recommended for conversion based on revised AIS.
5	AIS : 025	Safety and Procedural Requirements for Type Approval of LPG operated vehicles.	Rule 115 C	Recommended
6	AIS : 026	Code of Practice for use of LPG Fuel in Internal Combustion Engine to Power 4 Wheeled Vehicles.	Rule 115 C	Recommended
7	AIS : 027	Code of Practice for use of LPG Fuel in Internal Combustion Engine to Power 2 & 3 Wheeled Vehicles.	Rule 115 C	Recommended
8	AIS : 028 (Rev. 1)	Code of practice for use of CNG/Bio-CNG/LNG fuel in internal combustion engines	Rule 115 AA, B, CA	Recommended for conversion based on revised AIS.
9	AIS : 035	Automotive Vehicles -The Arrangement of Foot Controls of Vehicles	Rule 124 (1) (45)	Recommended
10	AIS : 038 (Rev.1)	Electric Power Train Vehicles- Construction and Functional Safety Requirements	Rule 124 (1) Table Sr. No. (26)	Recommended for conversion based on revised AIS (AIS 038 (Rev. 2)) which is already adopted by CMVR-TSC.

 CMVR-TSC – Agenda 2 (i)				
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
11	AIS : 039 (Rev.1)	Electric Power Train Vehicles– Measurement of Electrical Energy Consumption	Rule 124 (1) Table Sr. No. 27	Recommended for conversion based on revised AIS.
12	AIS : 040 (Rev.1)	Electric Power Train Vehicles - Method of Measuring the Range	Rule 124 (1) Table Sr. No. 28	Recommended for conversion based on revised AIS.
13	AIS : 041 (Rev.1)	Electric Power Train Vehicles Measurement of Net Power and The Maximum 30 Minute Power	Rule 124 (1) Table Sr. No. 29	Recommended for conversion based on revised AIS.
14	AIS : 042	Agricultural Tractors – Steering Efforts Requirements.	Rule 98-B	Recommended
15	AIS : 043	Recommendation of Braking System and Performance Requirements for the combination of Agricultural Tractor and Trailer	Rule 96-C	Recommended
16	AIS : 045	Automotive vehicles - Windscreen wiping system for 3 wheeler vehicles and Vehicles treated as such	Rule 101(2)(ii)	Recommended
17	AIS : 046	Automotive Vehicles – Hand-Holds for Three, Four and more than Four Wheeled Motor Vehicles – Specifications	Rule 124 (1), Table Sr. No. (29)	Recommended
18	AIS : 047	Automotive Vehicles - Interior Fittings - Specifications for other than M1 Category Vehicles	Rule 124 (1), Table Sr. No. (38)(c)	Recommended
19	AIS : 048	Battery Operated Vehicles - Safety Requirements of Traction Batteries	Rule 124 (1), Table Sr. No. (49)	Recommended
20	AIS : 050	Requirements for Vehicles with regard to Selection and Approval for use of Tyres for Two and Three-Wheelers	Rule 95(1)	Recommended

 CMVR-TSC – Agenda 2 (i)				
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
21	AIS : 051	Requirements for Vehicles with regard to Selection and Approval or use of Tyres for other than Two and Three-Wheelers.	Rule 95(1)	Recommended
22	AIS : 055	Automotive CNG / LPG Vehicles – Test Method to Evaluate the Range.	Rule 115	Recommended
23	AIS : 056 (Rev.1)	Requirements of Truck Cabin Ventilation System for Category N2 & N3 Vehicles	Rule 125-C (5)	Recommended
24	AIS : 070	Temporary Cabin for Drive-Away-Chassis Configuration / Vehicles	Rule 125 (1-C)	Recommended
25	AIS : 071 (Part 1)	Automotive Vehicles - Identification of Controls, Tell-Tales and Indicators	Rule 124 (1), Table Sr. No. (18)	Recommended
26	AIS : 071 (Part 2)	Automotive Vehicles - Identification of Controls, Tell-Tales and Indicators	Rule 124 (1), Table Sr. No. (18)	Recommended
27	AIS : 072	Approval of Restraining Devices for Child Occupants of Power- Driven Vehicles (“Child Restraint System”)	Rule 125 (8)	Recommended
28	AIS : 073 (Part 1)	Automotive Vehicles – Wheel Rims for Two and Three Wheeled Vehicles - Light Alloy Wheel Rims – Method of Test and Requirements	Rule 124 (1), Table Sr. No. (43)	Recommended
29	AIS : 073 (Part 2)	Automotive Vehicles – Wheel Rims for Two and Three Wheeled Vehicles - Sheet Metal Wheel Rims – Method of Test and Requirements	Rule 124 (1), Table Sr. No. (43)	Recommended
30	AIS : 073 (Part 3)	Automotive Vehicles –Wheel Rims for Two and Three Wheeled Vehicles –Spoke Wheel Rims – Method of test and Requirements	Rule 124 (1), Table Sr. No. (43)	Recommended

 CMVR-TSC – Agenda 2 (i)				
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
31	AIS : 074	Protection against Unauthorized use – 2 & 3 W	Rule 124 (1), Table Sr. No. (44)	Recommended
32	AIS : 075	Protection against unauthorized use – 4 wheeled vehicles	Rule 124 (1), Table Sr. No. (51)	Recommended
33	AIS : 076	Vehicle Alarm Systems (VAS) for M1 and N1 Category	Rule 124 (1), Table Sr. No. (52)	Recommended
34	AIS : 084 (Part1)	Demisting Systems of Glazed Surfaces (Windscreen)	Rule 124 (1), Table Sr. No. (46)(a)	Recommended
35	AIS : 084 (Part2)	Defrosting Systems of Glazed Surfaces (Windscreen)	Rule 124 (1), Table Sr. No. (46)(b)	Recommended
36	AIS : 088	Rear Warning Triangles for Slow Moving Vehicles (By Construction), Agricultural Tractors, their Trailers and Semi-Trailers	Rule 124-A (2)	Recommended (based on revised AIS 008 (Rev.1) which is adopted in CMVR-TSC).
37	AIS : 089	Rear Marking Plates for Heavy and Long Vehicles	Rule 104-D	Recommended (based on AIS-089 (Rev.1) which is adopted in CMVR-TSC). To be converted into single standard (for component and installation) in-line with AIS unlike 2 standards initiated by TED 11.
38	AIS : 091 (Part 1)	Mechanical Coupling Components of Combinations of Vehicles other than Agricultural Tractors - Requirements	Rule 124 (1), Table Sr. No. (22)(a)	Recommended
39	AIS : 091 (Part 2)	Mechanical Couplings between Agricultural Tractor and Towed Vehicle and Vertical Load on the Coupling Point	Rule 124 A, 5A	Recommended

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
40	AIS : 092	Mechanical Coupling Components of Combinations of Vehicles other than Agricultural Tractors	Rule 124 (1), Table Sr. No. (22)(b)	Recommended
41	AIS : 096	Behaviour of Steering Mechanism of a Vehicle in a Head on Collision	Rule 124 (1), Table Sr. No. (5-C)	Recommended
42	AIS : 097	Procedure for determining the "H" Point and the Torso Angle for 50th percentile Adult Male in seating positions of Motor Vehicles.		Recommended
43	AIS : 098	Protection of the Occupants in the event of an Offset Frontal Collision	Rule 124 (1), Table Sr. No. (5-b)	Recommended
44	AIS : 099	Protection of the Occupants in the event of a Lateral Collision	Rule 124 (1), Table Sr. No. (6-b)	Recommended
45	AIS : 102 (Part1)	CMVR Type Approval for Hybrid Electric Vehicles of M & N Category with GVW ≤ 3500 kg and L category vehicles	Rule 124 (1), Table Sr. No. (47)	Recommended
46	AIS : 102 (Part2)	CMVR Type Approval for Hybrid Electric Vehicles of M & N Category with GVW > 3500 kg	Rule 124 (1), Table Sr. No. (47)	Recommended
47	AIS : 104	Technical Requirements of Fuel Tanks for Agricultural Tractors	Rule 124A(6)	Recommended
48	AIS : 105	Requirements of Ballast Mass for Agricultural Tractors	Rule 124A(8)	Recommended
49	AIS : 106	Requirements of Load Platforms of Agricultural Tractors	Rule 124A(10)	Recommended
50	AIS : 107	Requirements of Driver's Field of Vision for Agricultural Tractors	Rule 124A(12)	Recommended

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
51	AIS : 109	Requirements of Coupling Device (Front) of Agricultural Tractor	Rule 124A (5B)	Recommended
52	AIS : 110	Temporary-Use Spare Wheel / Tyres and Run Flat Tyres	Rule 95(7)	Recommended
53	AIS : 111	Requirements of Attendant's Seats of Agricultural Tractors	Rule 124A(11)	Recommended
54	AIS : 114	Agricultural Tractors - Rear View Mirrors - Installation Requirements	Rule 125(4)	Recommended
55	AIS : 115 (Part 1)	Driver - Perceived Noise Level of Agricultural Tractors - Method of Measurement	Rule 120(3)	Recommended
56	AIS : 115 (Part 2)	Permissible Sound Level at Bystander of Agricultural Tractors - Method of Measurement	Rule 120(3)	Recommended
57	AIS : 116	Maximum Design Speed of Agricultural Tractors	Rule 124A(13)	Recommended
58	AIS : 120	External Projections-Performance Requirements for M1 Vehicles	Rule 124 (1), Table Sr. No. (11)	Recommended
59	AIS : 126	Two Wheeled Motor Vehicles - Location, Identification and Operation of Controls Tell-tales and Indicators	Rule 124 (1), Table Sr. No. (18A)	Recommended
60	AIS : 128	Testing Procedure and Requirements for Headlamp Beam Testing and Brake Testing at Authorized Testing Stations using Headlight Tester and Roller Brake Tester	Rule 62	Recommended

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
2) Priority 1: AIS standards recommended for conversion (the soft copies to be taken from AISC Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
61	AIS : 133	Electronic Stability Control Systems	Rule 96 (10)	Recommended
62	AIS : 134	Safety measures for Occupants of Three Wheeled Vehicles	Rule 125 (11)	Recommended
63	AIS : 151	Uniform Provisions Concerning the Approval of Vehicles of Categories M1 and N1 with regard to braking	Rule 96-B	Recommended
64	AIS : 152	Uniform Provisions Concerning the Approval of Vehicles of Categories M1 N1 with regard to brake assist system	Rule 96(11)	Recommended
65	AIS : 155	Microdot Systems: Product Specification	Rule 92 (4)	Recommended

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
3) Priority 2: AIS standards recommended for conversion subjected to conditions				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
1	AIS : 001	Rear - View Mirrors	125 (2)	It is felt before the standard is taken up for conversion issues with respect to transitional provisions which allow use of new supplement(s) or series of amendment to base UN regulation for approvals shall be addressed. Further all mirror device standards allows type approval of "E/e" approved components by confirming only limited tests such as dimension & reflecting surfaces tests as specified in respective AIS. It needs to be ensured if this can be permitted in BIS domain.
2	AIS : 001 (Part 1) (Rev.1)	Approval of Devices for Indirect Vision Intended for use on M, N Category and L Category with Bodywork Vehicles	125 (2)	
3	AIS : 001 (Part 2) (Rev.1)	Approval of Devices for Indirect Vision Intended for use on M, N Category and L Category with Bodywork Vehicles	125 (2)	
4	AIS : 002 (Part 1) (Rev.1)	Approval of Devices for Indirect Vision intended for use on L category with bodywork vehicles, M and N category - Installation requirements	125 (2)	
5	AIS : 002 (Part2) (Rev.1)	Approval of Devices for Indirect Vision intended for use on L category with bodywork vehicles, M and N category - Installation requirements	125 (2)	
6	AIS : 004 (Part 3)	Automotive Vehicles - Requirements for Electromagnetic Compatibility	Rule 124(1), Table Sr. No. 21(ii)	
				AIS 004 (Part 3) is recently modified to AIS 004 (Part 3) (Rev. 1) and was adopted in 57 meeting of CMVR-TSC. It is proposed to review the implementation time after October 2020. It is proposed that the standard may be taken up for conversion subsequent to finalization of date of implementation.

ARAI® Progress through Research		CMVR-TSC – Agenda 2 (i)			
3) Priority 2: AIS standards recommended for conversion subjected to conditions					
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark	
7	AIS : 008 (Rev.1)	Installation Requirements of Lighting and Light - Signalling Devices for Motor Vehicle having more than Three Wheels including Quadricycle, Trailer and Semi-Trailer excluding Agricultural Tractor and Special Purpose Vehicle	Rule 124(1), Table Sr. No. 20	<p>It is felt that before the standards are taken up for conversion, following issues need to be addressed:</p> <ul style="list-style-type: none"> • Issues with respect to transitional provisions which allow use of new supplement(s) or series of amendment to base UN regulation for approvals. • Lighting technology is very emerging in nature which may involves updation in Indian standards at frequent instances. • Further component standards for lighting devices always go hand in hand with installation standards for lighting devices by cross-referring one standard in other standard. • All lighting and light signalling devices standards are under revision in AISC. Some of which are already approved by AISC and adopted by CMVR-TSC. The latest revisions need to be checked with AISC secretariat before taking up conversion. 	
8	AIS : 009 (Rev.1)	Automotive Vehicles - Installation Requirements of Lighting and Light-signalling Devices for L Category Vehicles, their Trailers and Semi-Trailers (Date of hosting on website: December 30, 2016)	Rule 124(1), Table Sr. No. 24		
9	AIS : 010	Performance Requirements of Lighting and Light-Signalling Devices for 2 and 3 Wheeled Motor Vehicles, their Trailers and Semi-trailers and Vehicles treated as such	Rule 124(1), Table Sr. No. 32		
10	AIS 010 (Part 1 to 5) (Rev. 1)	Lamps (2 W)	Rule 124(1), Table Sr. No. 20 (i)(a) and 32 (a) & (b)		
11	AIS : 012	Performance Requirements of Lighting and Light-Signalling Devices for Motor vehicle having more than Three-Wheels	Rule 124(1), Table Sr. No. 20 (i)(a) and 32 (a) & (b)		
12	AIS 012 (Part 1 to 10) (Rev. 1)	Lamps (4 W)	Rule 124(1), Table Sr. No. 20 (i)		

ARAI® Progress through Research		CMVR-TSC – Agenda 2 (i)			
3) Priority 2: AIS standards recommended for conversion subjected to conditions					
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark	
13.	AIS : 030	Installation Requirements for Lighting and Light-Signalling Devices for Agricultural Tractor.	Rule 124-A (2A)	<p>It is felt that before the standards are taken up for conversion, following issues need to be addressed:</p> <ul style="list-style-type: none"> • Issues with respect to transitional provisions which allow use of new supplement(s) or series of amendment to base UN regulation for approvals. • Lighting technology is very emerging in nature which may involves updation in Indian standards at frequent instances. • Further component standards for lighting devices always go hand in hand with installation standards for lighting devices by cross-referring one standard in other standard. • All lighting and light signalling devices standards are under revision in AISC. Some of which are already approved by AISC and adopted by CMVR-TSC. The latest revisions need to be checked with AISC secretariat before taking up conversion. 	
14.	AIS : 030 (Rev.1)	Installation Requirements for Lighting and Light-Signalling Devices for Agricultural Tractor.	Rule 124-A (2A)		
15.	AIS : 034	Automobile Lamps	Rule 124 (1) (1)		
16.	AIS : 034 (Part 1) (Rev.1)	Provisions concerning the Approval of Filament Lamps for use in Approved Lamp Units on Power-driven Vehicles and their Trailers	Rule 124 (1) (1) and 124-A		
17.	AIS : 034 (Part 2) (Rev.1)	Provisions concerning the Approval of Gas-discharge Light Sources for use in Approved Gas-discharge Lamp units of Power-driven Vehicles	Rule 124 (1) (1)		
18.	AIS : 057 (Rev.1)	Provisions concerning the Approval of Retro-Reflecting Devices for Power Driven Vehicles and their Trailers	Rule 104 (4), Rule 104-A(vi) Rule 104-B (2), Rule 104-C (1)		
19.	AIS : 062 (Rev.1)	Performance requirements for Lighting and Light-Signalling Devices for Agricultural Tractors.	Rule 124-A (2)	Conversion can happen only if AIS-010 (Rev.1) (Part 1 to 5) and AIS-012 (Rev.1) (Part 1 to 10) are converted to IS by IS.	

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
3) Priority 2: AIS standards recommended for conversion subjected to conditions				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
20.	AIS : 071 (Part 1)	Identification of Controls, Tell-Tales and Indicators	Rule 124 (1), Table Sr. No. (18)	AIS 071 (Part 1)(Rev.1) is adopted in CMVR-TSC and proposed for implementation. The tell tale requirements are also prescribed in lighting standards. Conversion of this standard can be initiated only when lighting standards are taken up for conversion.
21.	AIS : 071 (Part 2)	Automotive Vehicles – Control Location and Operation Requirements	Rule 124 (1), Table Sr. No. (18)	Conversion is linked to AIS 071 (Part 1) (Rev. 1).
22.	AIS : 083	Headlamp Cleaners and their Fitment on Power Driven Vehicles with regard to Headlamp Cleaners	Indirectly notified in AIS-008 (Rev.2)	Conversion is linked to conversion of AIS 008 (Rev. 2)
23.	AIS : 090	Approval of Retro-Reflective Markings for Heavy and Long Vehicles, their Trailers and Semi-trailers	Rule 104-D	Draft IS are aligned with AIS 090. Recommended to align these draft IS standards with AIS-090 (Rev.1) which is adopted in CMVR-TSC. Recommended to have single standard for component and installation in-line with AIS 090 (Rev. 1) unlike two standard initiated by TED 11. Also before taking up conversion the following issues need to be addressed: Provision to allow compliance to changes arising out of new supplement(s) or series of amendment to base UN regulation. Provision to allows TA of “E/e” approved components by confirming to only limited tests such as Photometry & Colourimetry as specified in respective AIS.

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
3) Priority 2: AIS standards recommended for conversion subjected to conditions				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
24.	AIS : 100	Requirements for the Protection of Pedestrian and other Vulnerable Road Users in the event of a Collision with a Motor Vehicle	Rule 124 (1), Table Sr. No. (6-c)	The subject is recently implemented and needs time to get mature. The conversion can be taken up at a later date.
25.	AIS : 127	Provisions Concerning the Approval of Adaptive Front- Lighting Systems (AFS) for Motor Vehicles	Rule 124 (1), Table Sr. No. (53)	It is felt that before the standards are taken up for conversion, following issues need to be addressed: <ul style="list-style-type: none"> Issues with respect to transitional provisions which allow use of new supplement(s) or series of amendment to base UN regulation for approvals. Lighting technology is very emerging in nature which may involves updation in Indian standards at frequent instances. Further component standards for lighting devices always go hand in hand with installation standards for lighting devices by cross-referring one standard in other standard.
26.	AIS : 135	Fire Detection and Alarm System (FDAS) & Fire Detection and Suppression Systems (FDSS) for Buses of Type III (AIS-052)-Requirements	Rule 125-C (7)	Standard is proposed to be revised based on the directions of CMVR-TSC. The revised AIS 135 may be subsequently converted to IS or may be directly published as IS.

ARAI® Progress through Research		CMVR-TSC – Agenda 2 (i)		
4) Priority 3: AIS standards which are to be considered with Priority Status P3 considering the complexity of the subject				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
1	AIS : 049 (Rev.1)	Electric Power Train Vehicles	Rule 124 (1), Table Sr. No. (49)	<ul style="list-style-type: none"> • These standards include administrative requirements. • The separation of administrative requirements from technical requirements in these standards is a time consuming task and may also be impractical. • Participation in formulation of standards such as Bus Body Code, Truck Body Code etc., by unorganized sector is rare. However, the standards are equally applicable to them. In such case it would not be appropriate to convert them to IS standard.
2	AIS : 052 (Rev.1)	Bus Body Design and Approval	Rule 125-C	
3	AIS : 063	School Buses	Rule 125-C (2)	
4	AIS : 093 (Rev.1)	Truck Cabs, Truck Bodies and Trailers	Rule 125C	
5	AIS : 113	Trailers / Semi-trailers of categories T2, T3 and T4 being towed by Motor Vehicles of categories N2 and N3	Rule 125-C	
6	AIS : 119 (Rev.1)	Sleeper Coaches	Rule 125-C(5)	
7	AIS : 123 (Part 1)	Vehicles Retrofitted with Hybrid Electric System	115 D	
8	AIS : 123 (Part 2)	CMVR Type Approval of Hybrid Electric System Intended for Retro-fitting on Vehicles of M and N Category having GVW > 3500 kg		
9	AIS : 123 (Part 3)	CMVR Type Approval of Electric Propulsion Kit Intended for Conversion of Vehicles for Pure Electric Operation		
10	AIS : 124	Motor Caravans	Rule 125 G	

ARAI® Progress through Research		CMVR-TSC – Agenda 2 (i)		
4) Priority 3: AIS standards recommended for conversion (the soft copies to be taken from AIS Secretariat for conversion)				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
11	AIS : 125 (Part 1)	Road Ambulances	Rule 125 F	<ul style="list-style-type: none"> • These standards include administrative requirements. • The separation of administrative requirements from technical requirements in these standards is a time consuming task and may also be impractical. • Participation in formulation of standards such as Bus Body Code, Truck Body Code etc., by unorganized sector is rare. However, the standards are equally applicable to them. In such case it would not be appropriate to convert them to IS standard.
12	AIS : 131	Type Approval Procedure for Electric and Hybrid Electric Vehicles introduced in market for Pilot / Demonstration Projects intended for Government Scheme	Rule 124 (1), Table Sr. No. (47)(b)	
13	AIS : 137 (Part 1 to 4)	BS VI (2 W, 3 W, 4 W)	Rule 115 (17), (18), (19)	
14	AIS : 137 (Part 5)	Measurement of Net Power and the Maximum 30 Minutes Power of Electric Drive Trains and Emission of Visible Pollutants of Motor Vehicles (BS VI)		
15	AIS : 137 (Part 6)	BS VI Administrative procedures		
16	AIS : 137 (Part 7)	Bharat Stage (CEV/TREM)-IV PART-7-B : Bharat Stage (CEV/TREM)-V	Rule 115-A (9)	
17	AIS : 139	Double Deck Buses	Rule 125-C (6)	
18	AIS : 145	Additional Safety features for Category M & N Vehicles	Rule 125(9)(10)	
19	AIS : 153	Uniform provisions for Bus construction (Based on UN Regulation 107)	Rule 125-C (7)	

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)		
5) Priority 4: List of AIS standards which are administrative in nature and are never to be converted to IS				
Sr. No.	AIS Number	Title of AIS	CMV Rule	Remark
1.	AIS : 000	Administrative Procedure to deal with Corrigendum, Amendments or Revisions to AIS, TAP 115/116, CMVR Notifications, IS and ISO standards, which are notified under CMVR	Rule 126	<ul style="list-style-type: none"> Not Recommended for conversion. These standards cover administrative requirements for type approval and COP of vehicle.
2.	AIS : 007 (Rev.5)	Information on Technical Specifications to be Submitted by the Vehicle Manufacturer	Rule 126	
3.	AIS : 017	Procedure for Type Approval and Certification of Vehicles for Compliance to Central Motor Vehicles Rules.	Rule 126, first proviso	
4.	AIS : 017 (Part 2) (Rev.2)	Procedure for Type Approval & Certification of Agricultural Tractors for Compliance to Central Motor Vehicles Rules	Rule 126, third proviso	
5.	AIS : 037	Procedure for Type Approval and Establishing Conformity of Production for Safety Critical Components	Rule 124 (4)	

ARAI [®] Progress through Research		CMVR-TSC – Agenda 2 (i)	
Secretariat's Recommendation (for the published and notified AIS standards)			
<ul style="list-style-type: none"> All items listed in Priority 0 will be taken up for review for implementation under CMVR in the next meeting of AISC. For items listed in Priority 1, AISC Secretariat will share the word copies of the published standards to BIS to convert the same to IS standards. For items listed in Priority 2 BIS may review the comments from AISC. Based on resolution of the issues highlighted the standards may be taken up for conversion. For items listed in Priority 3, AISC will continue to discuss the possibilities of converting these standards to IS standards. For items listed in Priority item 4, no action is recommended at the moment. BIS is requested to follow the sequence of conversion as per the priority lists. Subsequently these standards will be taken up for discussion for implementation under CMVR. 			

Secretariat's Recommendation (for the new subjects)

- To begin with an AIS standard should be formulated. It is often observed that while implementing a standard, amendments are required, due to various technical and administrative issues.
- The amendments to AIS standards can be worked out quickly and thus the process does not delay the approval process.
- In view of the above all AIS standards (new subjects) to be notified under CMVR should be taken up for conversion **atleast after six months from the date of implementation of the same in CMVR.**
- **Committee may deliberate and give directions.**

Secretariat's Recommendation (for CMVR)

Present : Temporary use spare wheel or tyre and Run Flat Tyre for Vehicles of Categories L7, M1 and N1, if they are different from the normal tyre used on the vehicle shall conform to AIS 110:2019, as amended from time to time, **till the corresponding BIS specifications are notified under the Bureau of Indian Standards Act, 1986 (xx of xxxx).**

The highlighted text above indicates that as soon as an IS standard is published for the subject for which an AIS standard is already notified, the IS standard comes into force.

In this scenario following issues need to be considered:

- The type approval certificates carry the details of the notification published by MoRTH and the standard notified therein.
How to link MoRTH and BIS notifications?
- There have been instances where it is observed that published IS standard is not equivalent to notified AIS standard.
 - ✓ In this case if IS standards becomes the notified standard, with the date of its publication in BIS gazette, then the Type Approval granted may not remain valid. This is so because the additional requirements mentioned in IS would not have been complied with.

Proposal: Temporary use spare wheel or tyre and Run Flat Tyre for Vehicles of Categories L7, M1 and N1, if they are different from the normal tyre used on the vehicle shall conform to AIS 110:2019, as amended from time to time, **till the corresponding BIS specifications are notified under the Bureau of Indian Standards Act, 1986 (xx of xxxx) and subsequently notified in CMVR, 1989.**

Note: In the table under Rule 124 in which various safety standards are notified, the reference of the line "till the corresponding BIS specifications are notified under the Bureau of Indian Standards Act, 1986 (xx of xxxx)" is not given.

Update on testing of vehicle fitted with Crash / & Bull bar

6th August,2020

57th CMVR TSC

(iii) Crash Guards / Bull Bars :

Ms. Vijayanta Ahuja, ICAT, presented the progress on the subject. Her presentation is attached as Annexure-III. She presented the recommendations for 2 and 4 wheelers and highlighted that no fitment is proposed for 3 wheelers. Ms. Ahuja expressed that few manufacturers making crash guards and bull bars have expressed their intent to meet the standards as applicable. Committee noted the information and it was agreed that crash guard and bull bar manufactures should meet the proposed standards as given in the presentation. Further, it was agreed that the proposal for allowing fitment of crash guards and bull bars should be supported with requisite test data. SIAM members opined that for crash evaluation, only original fitments are taken into consideration and any afterfitment might alter the crash compatibility of passenger cars. Chairman enquired whether specifying the material for such structures could achieve the safety and other requirements. Director ICAT opined that the standard should not prescribe any specific material and efforts are therefore made to only include performance evaluation. In the absence of data it was decided to discuss the matter in the next meeting of the CMVR-TSC.

Way Forward :
TBD

Recommendation @ 57th CMVR TSC

Final Recommendations

2W



- ① As discussed in 56th CMVR TSC – Draft Amendment to AIS 147 – Amd 1 was circulated.
- ② Comment received from SIAM on 4th Feb 2020

Crash Test / Deflection test added in Panel discussion in June 2020

3W



Panel recommends - No such external fitments.

4W

M1



- ① **Physical verification** : Obstruction to visibility of registration plate and external lighting and signalling devices.
- ② Comply to AIS-120: 2014:External Projection ; AIS:100- Pedestrian safety; AIS:098- offset Frontal Collision ;AIS:145-Air bag deployment

N,M2,M3



Physical verification : Obstruction to visibility of registration plate and external lighting and signalling devices.
comply to the requirements of IS: 13942: 1994 -external projection

Crash / Bull bar: Background

Recommendation from Committee

A. Static Test

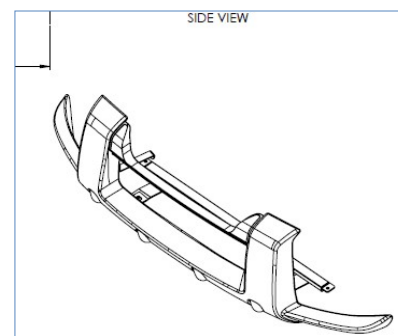
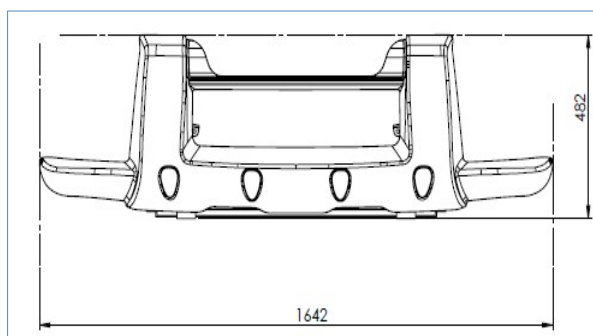
Sl.no	Standard	TEST
1.	AIS-008(Rev1) : 2010	Physical verification in order to verify any Obstruction of Lights
2.	CMV Rule 50	Obstruction to visibility of registration plate
3.	AIS-120: 2014	External Projection
4.	CMV Rule 93 and vehicle weight	Vehicle dimensions and weight

B. Dynamic Test

Sl.no	Standard	TEST
1.	AIS:098-2008	Offset Frontal Collision test
2.	AIS-100: 2010	Pedestrian safety
3.	AIS-145: 2017	Air bag deployment

Test Trials

Category	M1
Vehicle un laden weight (kg)	1262
Weight of Crash / Bull bar	9+0.4 Kgs kg (front) , 5 kg (rear)
Material of Crash / Bull Bar	ABS & MS Clamp



Results of Development Test

Sr. No.	Test Name	Test Objective	Status	Test Result
Phase 1: Static and non-Destructive test				
01	AIS-008(Rev1) : 2010	Physical verification in order to verify any Obstruction of Lights	●	No obstruction to any light was observed
02	CMV Rule 50	Obstruction to visibility of registration plate	●	No obstruction to any visibility of registration plate was observed
03	AIS-120: 2014	External Projection	●	Complies to AIS 120
04	CMV Rule 93	Vehicle dimensions and weighment	●	Changes highlighted in subsequent slide
Phase 2: Crash test				
05	AIS-100: 2010	Pedestrian protection evaluation (Head form & Leg form Impact)	●	Compliance with the requirements
06	AIS-098-2008	Offset Frontal Collision test	●	Compliance with the requirements
07	AIS-145: 2017	Air bag deployment	●	Compliance with the requirements

Dimensions



Particulars	Front Bull bar	Rear Bull Bar	Side Step	Roof carrier
Fitments	Yes	Yes	Yes	Yes
Dimension change with respect to base	Length : 125 mm	Length : 70 mm	width : 70 mm	height : 60 mm

Overall Vehicle

Vehicle categories	Maximum width (mm)	Maximum length (mm)	Maximum height (mm)
MI : Limit as per CMVR	2600	12000	4000
M1 : tested vehicle	1815	4600	1750

AIS 147 (2 W external projection) standard applicability for after market fitment.
Way Forward and Direction from MoRTH.



Thank You

Definition of Hybrids Vehicles

AIS-137 (Part 3)

- 3.19 **“Strong Hybrid Electric Vehicle (Strong HEV)”** means a ‘Hybrid Electric Vehicle (HEV)’ which has a ‘Stop-start’ arrangement, ‘Electric Regenerative braking system’ and a ‘Motor Drive’ (motor alone is capable to propel the vehicle from a stationary condition).
- 3.20 **“Plug-in HEV (PHEV)/ Range Extended Electric Vehicle (REEV)”** means a ‘Strong HEV’ vehicle which has a provision for ‘Off Vehicle charging’ (OVC) of ‘Rechargeable Energy Storage system (REESS)’.
- 3.21 **“Pure electric vehicle”** means vehicle powered by an electric power train only.

3.0 DEFINITIONS

AIS 102

For the purpose of this standard the following definitions shall apply

- 3.1 **For a Hybrid Electric Vehicle (HEV)**, the “power train” comprises a combination of two different drive train types:
- an internal combustion engine, and
 - one (or several) electric drive train(s)
- 3.2 **Hybrid Electric Vehicle (HEV)** means a vehicle that, for the purpose of mechanical propulsion, draws energy from both of the following on-vehicle sources of stored energy/power
- a consumable fuel
 - an electrical energy/power storage device (e.g.: battery, capacitor, flywheel, generator etc.)

AIS 65

Code for Miscellaneous Information:

- N - Conventional vehicles like Gasoline and Diesel
 A - CNG vehicles
 L - LPG vehicles
 B - Battery Operated Vehicles
 H - Hybrid Vehicles. ←→ Hybrid Electric Vehicle

- It is recommended that the vehicles complying with test procedure of AIS 137, as applicable and AIS 123, as applicable, should be certified with nomenclature **“H”** for Hybrid Electric vehicles.
- No other change is proposed.

BS VI : CNG / LPG Retrofitment

Rule Position & Way Forward

3rd September, 2020

Background

MoRTH vide letter no. RT-11036/46/2019-MVL dated 15th July 2019: constituted committee under Chairmanship of Director, ICAT.

Members :

Representative from MoRTH, Testing Agencies , SIAM, CNG/ LPG/ alternate fuel association.

The Terms of Reference (ToR) of the committee:

- To carry out a detailed study of existing rules and regulations in comparison to International regulatory framework so as to ensure that the national regulations are in line with international practices .
- To identify the OBD I and OBD II threshold limits; IUPR etc
- Applicability of Real world drive cycle emissions measurement using PEMS and conformity applicability.
- Applicability of In-service conformity and any other regulation.
- Inclusion of additional tests such as EMC and any other safety parameter.
- Review of layout criteria (+/- 25% in cc range for gasoline vehicles/ same engine cc for diesel vehicles); Revalidation test requirements and condition.
- To identify the responsibilities in the areas of warranty, maintenance and any other parameters involved during retrofitment.

Synopsis

CMVR-TSC – 57th Meeting

➤ ICAT highlighted the recommendations of the Committee vis-à-vis the existing requirements.

➤ SIAM highlighted the issue that CNG catalyst performance deteriorates with ageing. Specific catalyst for CNG vehicles requires specific engine calibration

➤ Committee convener apprised the CMVR-TSC that recommendations have been made to maintain a balance for both the retro fitters and OEMs

➤ It was agreed to call a special meeting of all stakeholders to discuss the issue further

Recommended Emission Norms

Test parameter	M & N category less than 3500 kg	M & N category Exceeding 3500 kg
	Testing norms	
Gaseous pollutant (Type I test), Idle emission (Type II Test), Crankcase emission (Type III test), Evaporative emission (Type IV test), EVAP (Type IV test), Durability (Type V test)	BS VI emission limits to be applicable (Test procedure as per AIS 137 Part-3)	BS VI emission limits to be applicable (Test procedure as per AIS 137 Part-4)
CO ₂ & Fuel consumption	CO ₂ to be measured	
On Board Diagnostic (OBD)	BS VI emission limits to be applicable (Test procedure as per AIS 137 Part-3)	BS VI emission limits to be applicable (Test procedure as per AIS 137 Part-4)
Engine Power	For all category is mandatory Limit: -15% ≤ Power NG ≤ +5%, w.r.t Power (base vehicle)	
In service conformity, IUPR	BS VI norms applicable as notified	

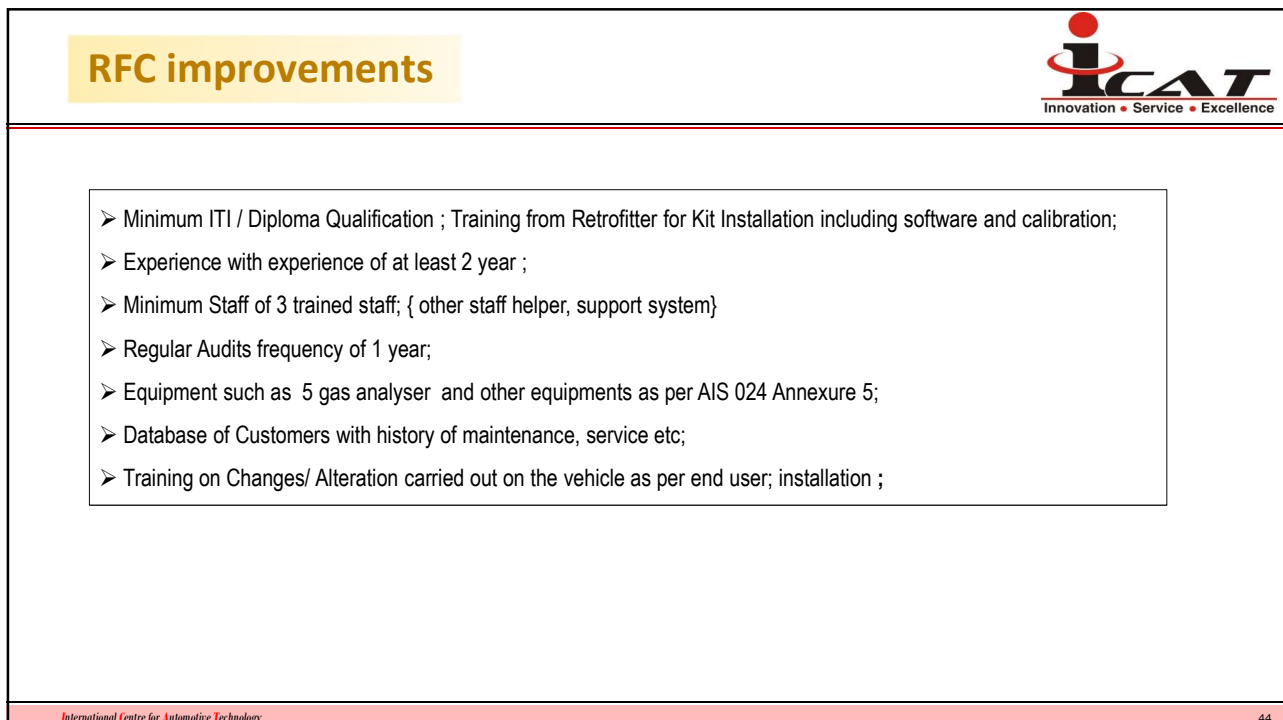
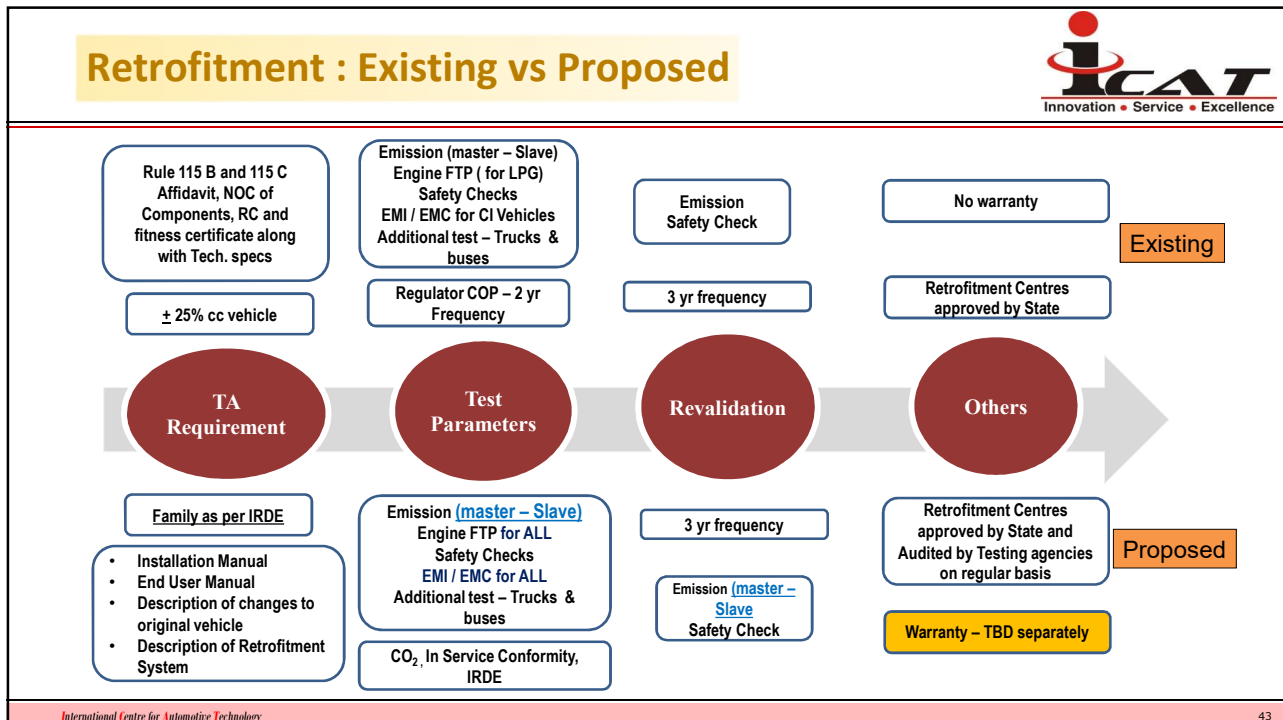
Synopsis

Recommendation

Parameters	Requirement
Revalidation Emission Safety Check	3 year frequency
Family concept	Engine CC: ± 7% tolerance for vehicles up to 1500 cc & ± 5% above 1500 cc of specific make
EMI / EMC for CI Vehicles	AIS 004
Gradeability test	AIS 003
Gaseous fuel kit installation and safety tests	AIS 024 & AIS 028 Rev 01
Gaseous fuel kit component testing requirements	Annexure IX of CMVR, 1989
Additional requirements for TA	Manual <ul style="list-style-type: none"> End User Manual covering description of Changes to original vehicle Retrofitment System

Way Forward

Request Direction from MoRTH



Review of CMVR and AIS standards in view of the changes in definition of L1 category

• Background

- Definition of L1 category vehicle was revised vide G.S.R 1225 (E) dated 20th December 2018 and a new draft G.S.R 336 (E) dated 29th May 2020 was issued.
- The comparison of definition before and after vide GSR 1225 are below:

Parameter	Upper limit for L1 category	
	Earlier	G.S.R 1225 and Draft G.S.R 336
Engine cc for ICE	50	50
Maximum Power kW (for BEV)	Not specified	4
Maximum Speed (km/h)	45	70

- With the change in speed limit some L2 category vehicles, are now classified as L1.
- It is felt that technical safety provisions should not be relaxed and the change should only facilitate driving license requirements.
- Recommendation.
 - Current safety regulations applicable to L2 category to be made applicable to L1 category with Vmax exceeding:
 - ✓ 50 km/h; and
 - ✓ Cut off speed of 45 km/h, presently prescribed in some standards shall be changed to 50km/h, to align with UNECE regulations.

Review of CMVR and AIS standards in view of the changes in definition of L1 category

• Proposed Change in Rule

✓ Extract from Draft G.S.R 336 dated 29th May 2020

2. In the Central Motor Vehicles Rules, 1989 (herein after referred as the said rules), in rule 2, (a) For clause (i), the following shall be substituted, namely: -

“(i) Category L1 means a motor cycle without gear or a light two wheeled powered vehicle with maximum speed 70 kilometres per hour and engine capacity not exceeding 50cc if fitted with a thermic engine or motor power not exceeding 4.0 kilowatts if fitted with electric motor”;

L1 category vehicles with maximum speed exceeding 50 kilometers per hour shall comply with requirements for lighting and light installation and braking as those specified for L2 category vehicles.

(b) Clause (ia) shall be omitted;

(c) For clause (ib), the following shall be substituted, namely:-

“(ib) Category L2 means a motorcycle or a light two wheeled powered vehicle with engine capacity exceeding 50cc if fitted with a thermic engine or motor power exceeding 4.0 kilowatts if fitted with electric motor”;

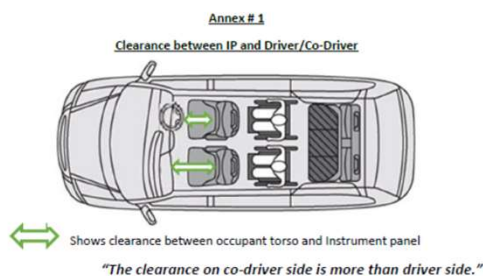
• Committee may deliberate.

CMVR-TSC – Agenda 2 (vi)

SIAM's inputs submitted to MoRTH vide letter TD-01: 536 dated 30th March 2020

- With reference to discussion on co-driver airbag implementation in 57th CMVR TSC meeting dated 13th Feb 2020, as requested SIAM would like to make following submission on the same.
- As already highlighted in the meeting, only safety performance in terms of injury criteria is mandated in UNECE. In offset Crash regulation (AIS 098) injury criteria for driver & co-driver are clearly specified and are measured during the homologation test. Seatbelts are the most effective occupant protection system and airbags only play a supplementary role to seatbelts.
- Vehicle manufacturers use a combination of high strength Body structure and restraint system comprising of seatbelts & airbag for meeting this occupant injury criteria (refer annexure # 1) and complying with regulatory requirements. Due to absence of steering wheel on co-driver side there is more clearance (refer Annexure # 1), hence vehicle body structure & seat belt is adequately designed to meet the co-driver occupant injury criteria. For driver side to comply injury criteria, both seat belt & airbag are needed.

Injury Limits as mentioned in AIS 098 (Same for both front seat occupants)



Injury criteria			
Parameter		Criteria	
Head	5.2.1.1. HPC	1000	
	5.2.1.1.3 ms G	80G	
Head contact			
Neck	NIC	5.2.1.3. Extension	57 Nm
		5.2.1.2. Tension	Fig.1 (%)
		5.2.1.2. Shear fore	Fig.2 (%)
		5.2.1.2. Shear aft	Fig.2 (%)
Thorax	5.2.1.4. ThCC	50 mm	
	5.2.1.5. V*C	1.0 m/s	
Femur	5.2.1.6. FFC	Fig.3 (%)	
Tibia	5.2.1.7. TCFC	8 kN	
	5.2.1.8. Upper TI	1.3	
	5.2.1.8. Lower TI	1.3	
Knee	5.2.1.9. Sliding knee	15 mm	
Steering wheel displacement			
Parameter		Criteria	
5.2.2. Upward vertical direction		80 mm	
5.2.2. Rearward horizontal direction		100 mm	

CMVR-TSC – Agenda 2 (vi)

SIAM's inputs submitted to MoRTH vide letter TD-01: 536 dated 30th March 2020

- With effective from Oct, 2019 all M1 category of vehicles have been tested as per AIS 098 and test data is available with test agency (ARAI & ICAT), basis of this data it can be easily verified that vehicles are adequately meeting the regulatory injury limits for driver with airbag and co-driver without airbag.
- On similar lines, although co-driver airbag was proposed in draft notification GSR 1014(E) dtd 26th Oct'16, SIAM submitted its technical justification for keeping it optional. After detailed deliberation in Crash panel and also with MoRTH, it was finalized and notified to have only Driver airbag as mandatory safety item under AIS-145 regulation.
- We therefore request you to consider NOT mandating specific technology like co-driver airbag and rather keep occupant injury as the criteria for judgment of crash compliance, which is in line with our objective of harmonization with international regulations.