

# ONBOARDING THE NSSR Handbook for SERVICE CENTRES

By

Venkatram K S (Gap Analyst, AOEC)

Aakkash K V (Emerging Analyst, BTECH & PGDM)

V 1.00.2025



Being detailed

Commercial vehicles are motor vehicles used for transporting  
“goods or paying passengers” for business purposes



# Table of Contents (Work in progress)

Sl No	Contents	Page No
1	Due Acknowledgment	4
2	Understanding of commercial vehicles	6
3	Understanding of customers and the market	11
4	Understanding of customer satisfaction	12
5	Culture of National Safety Social Responsibilities (NSSR)	14
6	Drive India NSSR-RS Units	19

# Table of Contents (Work in progress)

Sl No	Contents	Page No
21	Performance Analysis, Information, Components and Systems for NSSR-RS	20

# 1. Due Acknowledgment

We extend our special gratitude to the Honorable Secretary of the National Safety Council, Bengaluru – Karnataka Chapter for enabling us to take up this pilot and survey for delivering a handbook on improving road safety via customer engagement sensitization, readiness and related exercises.

We wish to acknowledge our sincere gratitude for all valuable guidance and constructive suggestions in the preparation of the handbook.

We wish to acknowledge the automobile dealer network for the brand \_\_\_\_\_ in helping us evaluate a pilot of the handbook.

We thank all other people directly and indirectly connected to this mission of improving road safety.

**ANALYST NAME: VENKATRAM K S**

**Associate ANALYST NAME: AAKKASH K V**

# Cost Benefit Analysis for the NSSR-RS Handbook

## **Why is the NSSR-RS Handbook needed?**

The NSSR-RS Handbook can help

- ☐ Condition assessment/Problem determinism
- ☐ Definitive Inventory
- ☐ Demand conditioning and enabling
- ☐ Customer Support for Anytime Anyhow and Anywhere service incorporation

## **The NSSR-RS Handbook can make a difference to**

- ☐ Forward Lifetime investments for safe and sustainable commuting
- ☐ 4P(s) and 6M(s) for safety

## **The NSSR-RS programme views the following as important for its success:**

- ☐ Infrastructure and Training facilities
- ☐ Training capacity/roadmap
- ☐ Training Instructors
- ☐ Centre of Excellence framework (**NSSR-RS-COE**)
- ☐ Continual consistency, control and commitment for the NSSR-RS curriculum

## **Editioning**

- ☐ Digital form
- ☐ Printed form (size 29.7 cm x 21 cm)
- ☐ Online version
- ☐ NSSR-RS Pull-out Holder
- ☐ Social Responsibility Addition to any Vehicle Document Holder

## **Price-points**

- ☐ Accelerates synergy for safe and sustainable commuting
- ☐ Adds and helps value perpetuation for social responsibility towards road safety
- ☐ Furthers Anytime-Anywhere-Anyhow service incorporation with Nth Line Support Liaison and Supply Chain Collaboration
- ☐ Granularity-Accountability-Transformability to reduce accidents via Active Culture, Commitment and Incorporation

## 2. Understanding of product and service quality

### Quality of automobile products and services

- ✓ Excellent design, aesthetics, and attention to detail
- ✓ Right for Health & Safety (of the customer/consumer)
- ✓ Conducive work influencers
- ✓ Excellent part/product/assembly engineering and ergonomics
- ✓ Right materials with test assurance
- ✓ Reduced incidence rate or likelihood
- ✓ Entry-level or supportive timing
- ✓ Equipped with Performance data
- ✓ Conducive inventory turnover rate

# 3. Understanding of customers and the market

## Understanding of the market for automobile products and services

- ✓ Target population
- ✓ Demography
- ✓ Customer segmentation
- ✓ Customer trends
- ✓ Customer satisfiers
- ✓ Customer interest in Health and Safety
- ✓ Customer interest to adapt, and adopt recommendations, guidelines and regulations

# 4. Understanding of customer satisfaction

- **Understanding of customer satisfiers**

- ✓ Assurance for key factors such as standards, safety, quality, reliability, and responsiveness
- ✓ Appropriate cost of quality and defect sampling rate (for change in technology and/or change in innovation strategy)
- ✓ Appropriate understanding and guidance strategy (to match demand and supply)
- ✓ Appropriate organizational culture for National Safety Social Responsibilities (NSSR), Connected Quality management, Connected Road Safety management, and Customer Relationship Management
- ✓ Appropriate systemic responsiveness for needs, enablers, benefits analysis, incidences, complaints, feedback and/or competition

- **Key indicators of customer satisfiers**

- ✓ Timely “needs-understanding” of customer segment for road safety enablers
- ✓ Timely incidence acknowledgment/management
- ✓ Zero or minimum returns/rejects/incidences/complaints
- ✓ Zero operational defects, safe, well-maintained & optimally performing vehicles, assist & safety systems



# 5. Culture of National Safety Social Responsibilities (NSSR)

Trusted Emergence in National Safety Council programmes for Road Safety could mean

Designing and developing a culture for road safety with **Proven granularity, Accountability and Transformability** at the macro and micro levels.

**Proven granularity** could mean defining a NSSR for Road Safety Scorecard, where there is a commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ☐ The **Dealer Network Model level**

- ☐ The **Customer / Commuter level**

- ☐ The **Learning and Growth level** to help strategize NEXT steps for knowledge centric programmes

- ☐ The **Deep Interaction Link level** to help strategize alignment for NSSR for road safety in the nature of purchase, nature of ownership and nature of association at the CRM/SCM/FLT levels

ATTN: The mentioned Abbreviations mean

CRM: Customer Relationship Management

SCM: Supply Chain Management

FLT: Forward Lifetime Theory

# 5.1 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ☐ The **Dealer Network Model level** by designing incorporations like the NSSR Handbook that is to be communicated about and given to the customer along with the Owner's manual
- ☐ The communications and reviews at the dealership level should be
  - ✓ About Customer Health and Safety
  - ✓ About solution finding to help the Customer adapt, and adopt NSSR recommendations, guidelines and regulations specific to Road Safety

## 5.2 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ❑ The **Customer / Commuter level** by designing incorporations for the customer to survey, assess and report responses for
  - ✓ Timely “needs-understanding” for road safety practices or enablers
  - ✓ Timely incidence acknowledgment/management for road safety practices or enablers
  - ✓ Record of returns/rejects/incidences/complaints about road safety enabling incorporations, products and services
  - ✓ Record of packaging defects of road safety enabling incorporations, products and services

## 5.3 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ❑ The **Learning and Growth level** to help strategize NEXT steps for knowledge centric programmes that rely on
  - ✓ Appropriate organizational culture for National Safety Social Responsibilities (NSSR), Connected Quality management, Connected Road Safety management, and Customer Relationship Management
  - ✓ Appropriate NSSR systemic assurance for standards, safety, quality, reliability, and responsiveness for needs, enablers, benefits analysis, incidences, complaints, feedback and/or competition

# 5.4 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

❑ The **Deep Interaction Link level** to help strategize alignment for NSSR for road safety in the nature of purchase, nature of ownership and nature of association at the CRM/SCM/FLT levels for

- ✓ Excellent part/product/assembly engineering and ergonomics
- ✓ Right materials with test assurance
- ✓ Excellent design, aesthetics, and attention to detail
- ✓ Right for surveys/studies of NSSR specific Health & Safety (of the customer/consumer)
- ✓ Conducive purchase/ownership/maintenance influencers
- ✓ Conducive inventory turnover rate
- ✓ Conducive NSSR surveys/studies/reports for Road Safety

# 5. Culture of National Safety Social Responsibilities (NSSR)

Trusted Emergence in National Safety Council programmes for Road Safety could mean

Designing and developing a culture for road safety with **Proven granularity, Accountability and Transformability** at the macro and micro levels.

**Proven granularity** could mean defining a NSSR for Road Safety Scorecard, where there is a commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ☐ The **Dealer Network Model level**

- ☐ The **Customer / Commuter level**

- ☐ The **Learning and Growth level** to help strategize NEXT steps for knowledge centric programmes

- ☐ The **Deep Interaction Link level** to help strategize alignment for NSSR for road safety in the nature of purchase, nature of ownership and nature of association at the CRM/SCM/FLT levels

ATTN: The mentioned Abbreviations mean

CRM: Customer Relationship Management

SCM: Supply Chain Management

FLT: Forward Lifetime Theory

Continual focus can add preponderance of possibilities, and business insights of tomorrow into relevant classes of automobiles/parts/components/vehicles/goods.

# 5.1 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ☐ The **Dealer Network Model level** by designing incorporations like the NSSR Handbook that is to be communicated about and given to the customer along with the Owner's manual
- ☐ The communications and reviews at the dealership level should be
  - ✓ About Purpose, Efficiency, Quality and Safety
  - ✓ About solution finding to help the Customer adapt, and adopt NSSR recommendations, guidelines and regulations specific to Road Safety

# 5.2 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ❑ The **Customer / Commuter level** by designing incorporations for the customer to survey, assess and report responses for
  - ✓ Timely “needs-understanding” for transportation and road safety practices or enablers
  - ✓ Timely incidence or supply chain disruption acknowledgment/management for road safety practices or enablers
  - ✓ Record of returns/rejects/incidences/complaints about road safety enabling assembly, incorporations, products and services
  - ✓ Record of assembly or customization defects of road safety enabling incorporations, products and services



## 5.3 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ❑ The **Learning and Growth level** to help strategize NEXT steps for knowledge centric programmes that rely on
  - ✓ Appropriate organizational culture for National Safety Social Responsibilities (NSSR), Connected Quality management, Connected Road Safety management, Connected Payload Safety Management and Customer Relationship Management
  - ✓ Appropriate NSSR systemic assurance for standards, safety, quality, reliability, and responsiveness for needs, enablers, benefits analysis, incidences, complaints, feedback and/or competition

# 5.4 Culture of National Safety Social Responsibilities (NSSR)

Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to at

- ❑ The **Deep Interaction Link level** to help strategize alignment for NSSR for road safety in the nature of purchase, nature of ownership and nature of association at the CRM/SCM/FLT levels for
  - ✓ Excellent build quality, part/product/assembly engineering and ergonomics
  - ✓ Right design, engineering, parts assembly, materials with test assurance
  - ✓ Excellent design, aesthetics, and attention to detail
  - ✓ Right for surveys/studies of NSSR specific Health & Safety (of the customer/consumer)
  - ✓ Conducive purchase/ownership/fleet management/maintenance influencers
  - ✓ Conducive inventory turnover rate
  - ✓ Conducive NSSR surveys/studies/reports for Road Safety, Crash worthiness and Payload Safety

# 6. Drive India NSSR-RS Units

Units 1 to \_\_\_\_ are part of the NSSR Commitment to incorporate a series of knowledge enabled exercises to sensitize, prepare, deploy, assess and monitor road safety practices adhered to by a driver/commuter/customer engagement for NSSR-RS provider (proposed to be a NSSR-RS Desk sending out notifications and proactive responses by the NSSR-RS sensitized traffic management network)

Working through any of the Units 1 to \_\_\_\_, will need the NSSR responder to review

- i. An Introduction to the unit
- ii. The Key Learning of the unit
- iii. The Safety Focus and Criteria of the unit
- iv. The Hazards Analysis for the unit
- v. The NSSR specific Involvement for the unit
- vi. The expected Responses reported for the unit
- vii. The Complaints commonly reported for the unit



The RTO's review of the relevant units can help this mission of road safety.



# Performance Analysis, Information, Components and Systems for NSSR-RS

(ARAI's review of this section is very important for this mission of road safety)

# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety Checklist

[ ] **Protection in normal driving or in an accident (Vehicle ability to withstand Higher shock loads?)**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

[ ] **Protection in normal driving or in an accident (Visibility related to the – Eye position of driver, angle of visibility, spacing for seating, need for rearward visibility?)**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

[ ] **Protection in an accident (Effect of Collision on the – Front, Rear, sides, sudden tilt, impacted roll over)**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety Checklist

☐ **Protection in driving or collision (There should be no items coming loose)**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

☐ **Protection in accident (Hertomatic Flashers and beepers – ignition automatically turning off)**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

☐ **Whether relevant Fire wall separating engine compartment and driver compartment has been incorporated?**

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety / Fitness Checklist

[ ] Whether braking system works effectively (for limit of road grip, manoeuvrability, vehicle speed for type of track surface, produces brake pedal pulsations in difficult track conditions)?

Condition: Ok/ Needs crash safety planning/Needs maintenance/Needs repair/Needs replacement

### [ ] Guidelines for possible Engine noises

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

### [ ] Guidelines for possible Crank noises

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety / Fitness Checklist

[ ] Guidelines for possible **Piston noises**

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for possible **Valve Train noises**

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for possible **pre-ignition problems**

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines and **Causes for the Engine to not crank or fully start**

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement



# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety / Fitness Checklist

[ ] Guidelines for the Engine to crank slowly but does not start

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for what can cause Excessive smoke (Black)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for what can cause Excessive smoke (Blue)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for what can cause Excessive smoke (White)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Road Safety / Fitness Checklist

[ ] Guidelines for what causes the Loss of coolant

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for Oil pressure problems (No reading)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for Oil pressure problems (low pressure reading)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

[ ] Guidelines for Oil pressure problems (high pressure reading)

Condition: Known/ Needs review/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## 1. Guidelines for possible Engine noises

Tap sound

Rattle sound

Light knocking

Deep knocking

Irregular heavy knocking

Rumble noise

Slapping noise

Vibrating sounds

Clatter noise

Hiss sound

Roar sound

Clunking sound

Whining sound

Shrieking sound

Squealing

Snapping sound on engine overhauling

Starved sound with high speed acceleration noise on starting - Timing belt problems

## Source or Cause possibly

Improper adjustment of Valve clearance

Loose or broken components like piston rings

Small end bearings worn out

Big end bearings worn out

Loose fly wheel

Main bearings worn out

Worn out piston or bores

Loose fittings of components

Broken rocker shaft or broken piston rings

Leak from inlet or exhaust manifolds or connections

Air filter malfunctioning noise, Air filter failure

Loose fly wheel, worn out thrust bearing, loose damper pulley

Malfunction in power steering or alternate bearings

Dry bearings in ancillary components

Slipping drive belt

Tight fitting of piston rings

## 2. Guidelines for possible Crank noises

### Source or Cause possibly

Excessive clearance in main bearings

Main journals out of alignment

Excessive axial play in crank shaft

Low oil pressure

Unbalanced crank shaft

Loose fly wheel

Loose fitting of main journals and main bearing caps

Improper seating of thrust bearings

Loose damper pulley

Excessive play in main journal bearings

Timing belt problems

## 3. Guidelines for possible Piston noises (sharp noises while at idling speed)

### Source or Cause possibly

Excessive side clearance

Loose fitting in small end bearing

Bent connecting rod

More clearance between piston pin and boss

# Performance Analysis

## 4. Guidelines for possible Valve Train Noise

### Source or Cause possibly

- Improper adjustment of valve clearance
- Bent push rod
- Worn out rocker arm and valve tip
- Warped valve
- Carbonized or scored valve stems
- Excessive clearance between valve stem and valve guide
- Worn out or broken valve spring
- Improper valve timing
- Worn out cam lobes
- Broken or damaged valve lifter
- Loose fitting of adjustment screw and nut for valve tappet clearance

## 5. Guidelines for Pre-ignition problems (deposits in combustion chambers and/or on spark plugs)

### Experience - poor acceleration, engine roughness and reduced top speed Source or Cause possibly

- Clogging of carburettor jets
- Improper idling
- Loose fitting of spark plugs
- Improved driving / Maintaining constant speed when possible

## 6. Guidelines for Causes for the Engine to not crank or fully start

### Source or Cause possibly

- Defective starting motor
- Defective battery
- Loose connection of battery wire and starting motor wire
- Fly wheel problem needing servicing
- Worn out teeth of fly wheel
- Slow running of armature shaft
- Timing belt problems

## 7. Guidelines for the Causes for the Engine to crank slowly but does not start

### Source or Cause possibly

- Defective fuel pump
- Fuel line blocked
- Fuel filter blocked
- Defective Fuel pump
- Air lock or air may be present in fuel line
- Less Fuel in tank
- Air cleaner blocked
- Defective fuel injector
- Worn out valves and springs in pump
- What can cause Over heating of engine Source or Cause possibly
- Loose fan belt
- Radiator blocked or surface area reduction
- Radiator tubes blocked
- Improper opening of thermostat valve
- Hose pipes blocked
- Coolant pump malfunctioning
- Coolant jackets and hoses may be clogged
- Head gasket seating improper
- Coolant level low
- Leakage of coolant from radiator
- Early or late ignition problem
- Clutch slipping
- Brake jamming or drag
- Tight wheel bearings

# Performance Analysis

## 8. Guidelines for what can cause Excessive smoke (Black)

### Source or Cause possibly

- Choked Air filter
- Fuel injection pump not properly calibrated
- Defective injector
- Defective governor diaphragm
- Incorrect valve clearance
- Poor compression

## 9. Guidelines for what can cause Excessive smoke (Blue)

### Source or Cause possibly

- Sticky or broken piston rings
- Worn out cylinder bores
- Weak compression
- Oil level in oil sump not proper
- Mixing of lubricating oil with fuel
- Improper grade engine oil
- Improper grade lubricating oil

## 10. Guidelines for what can cause Excessive smoke (White)

### Source or Cause possibly

- Defective valve seating
- Fuel injection pump not properly calibrated
- Delay between injection and combustion of fuel
- More unburnt fuel
- Low operating temperature

## 11. Guidelines for what causes the Loss of coolant

### Source or Cause possibly

- Radiator leakage
- Hose pipe leakage
- Loose drain plug or drain plug leakage
- Oil seal damaged for pump
- Leaky or faulty head gasket
- Damaged or cracked pump casing
- Improper or Loose or damaged thermostat or valve packing
- Faulty or missing radiator cap
- Crack in cylinder block
- Engine overheating

## 12. Guidelines for Oil pressure problems (No reading)

### Source or Cause possibly

- No oil in sump or reservoir
- Oil gauge not functioning properly
- Faulty oil pump
- Faulty valve or valve spring
- Loose connection or Faulty pressure gauge
- Leakage of oil

## 13. Guidelines for Oil pressure problems (low pressure reading)

### Source or Cause possibly

- Less oil in sump or reservoir
- Oil Filter clogged
- Faulty or worn out oil pump
- Faulty or broken valve spring
- Faulty or slack main bearings
- Leakage of oil

# Performance Analysis

## 14. Guidelines for Oil pressure problems (high pressure reading)

### Source or Cause possibly

Oil lines clogged

Faulty or broken valve

Faulty or defective pressure gauge

High viscosity or improper grade oil

### Fuel consumption checklist for a driver or owner (mileage and emission level influencer)

Date of response:

Time of response:

Do you idle your engine on a cold-start: Yes/No/Sometimes/Not applicable

Do you ensure your engine's idling speed is right or get this addressed whenever you can: Yes/No/Sometimes/Not applicable

Do you switch off your engine whenever not required or at halt times more than 1 minute: Yes/No/Sometimes/Not applicable

Do you address problems like engine overheating as soon as you can: Yes/No/Sometimes/Not applicable

Do you avoid changing gears often by speed control or by choosing right routes and lanes: Yes/No/Sometimes/Not applicable

Do you immediately address any problem with the flow of fuel or the functioning of the carburetor in your vehicle as soon as you can: Yes/No/Sometimes/Not applicable

Do you avoid using or switch off your vehicle's air-conditioner whenever you can: Yes/No/Sometimes/ Not applicable

Do you ask for recommendations from your service outlet for maintenance of good condition and mileage: Yes/No/Sometimes/Not applicable

# Performance Analysis

## Green your Trip planner (comfort levels influencer)

### Date of response:

### Time of response:

Do you use the best route option mostly: Yes/No/Sometimes/Not applicable

Do you use route forecasting options mostly: Yes/No/Sometimes/Not applicable

While planning a long-distance visit (within your city or town or region), do you plan according to weather forecasts, optimum distance, manageable stress levels, traffic volume levels and need for value-added services on-route: Yes/No/Sometimes/Not applicable

While planning a long-distance visit (outside your city, town or region), do you plan according to weather forecasts, best routes, comfort levels, minimal accidents or incidence trends, possible route diversions, availability of alternate transportation services, availability of emergency response services and need for other value-added services on-route: Yes/No/Sometimes/Not applicable

Would you like the search and navigate information services available today for commuting to be enhanced further, to interface with sentinel services at specific locations that can let you know beforehand occurrences or near probable occurrences of natural disasters, calamities, navigation problems, vital network and signal coverage failures, commuting hardships, and of any critical incidence management on-route: Yes/No/Sometimes/Not applicable

Would you like to know about any alpha assistance for impaired people in commuting: Yes/No/Not applicable



# Performance Analysis

## **First-Aid services (health and safety influencer)**

### **Date of response:**

### **Time of response:**

Does your vehicle have a first-aid kit compartment and are there provisions to maintain the same based on the medical history of your commuters or occupants: Yes/No/Sometimes/Not applicable

Does your vehicle have an air-bag to reduce impact to driver and co-passenger on collision: Yes/No/ Cannot comment/Not applicable

Is your vehicle fitted with a suitable fire extinguisher or alarm system that can warn occupants or commuters about the possibility of a fire or increasing smoke levels in the vehicle: Yes/No/ Cannot comment/Not applicable

Do you know whether your vehicle's windscreen, fenders, side-glasses, doors and chassis can sustain impact on collision at high-speed, and whether the manufacturer has issued warnings or recommendations to maintain speed control accordingly?

Do you know if the vehicle has been designed to facilitate safe exit for occupants: Yes/No/Cannot comment/Not applicable

Does your vehicle manufacturer proactively setup a service network that can provide emergency services or breakdown services within the shortest time durations: Yes/No/Cannot comment/Not applicable

Is your vehicle fitted with a suitable Global Positioning System (GPS) that can help such a service network track the location of vehicle and provide emergency or breakdown services within the shortest time durations: Yes/No/Cannot comment/Not applicable



# Performance Analysis

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Performance Tuning List (ICE)

☐ **Engine sound and running check**

Condition; Ok/ Needs tuning/Needs maintenance/Needs repair/Needs replacement

☐ **Exhaust smoke check**

Condition; Ok/ Needs tuning/Needs maintenance/Needs repair/Needs replacement

☐ **Oil leak while idling or while running check**

Condition; Ok/ Needs tuning/Needs maintenance/Needs repair/Needs replacement

# Performance Analysis

## **Performance Tuning List** (ICE)

[ ] **Noise conditions check (engine accessories, gears, bearings, suspension, drive line, tyres)**

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] **Vibrations check (constant velocity joints, drive shafts, transmission mountings, suspension components, wheel bearings, brakes)**

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] **On-road check at normal driving speeds / high speeds (Acceleration or deceleration, lack of power output, excessive oil consumption, excessive fuel consumption, noise and vibration at turning, engine rpm thresholds)**

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

# Performance Analysis

## Performance Tuning List (ICE)

- ☐ Test Drive **Safety check at normal driving speeds / high speeds (Acceleration or deceleration, lack of power output, excessive oil consumption, excessive fuel consumption, noise and vibration at turning, engine rpm thresholds)**

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

## Specific to (Lack of power output)

- ☐ Low compression

Remedy: Overhaul engine/Replace parts as necessary

- ☐ Late ignition timing

Remedy: Adjust ignition timing and check engine running

- ☐ Improper functioning of carburetor and fuel pump

Remedy: Service carburetor or fuel pump properly and check engine running

# Performance Analysis

## Performance Tuning List (ICE) - Specific to (Lack of power output)

☐ Air cleaner clogged or blocked

Remedy: Clean or clear clogs/Replace if necessary

☐ Fuel lining clogged or blocked

Remedy: Clear clogged lines/Replace if necessary

☐ Engine temperature high

Remedy: Service cooling system/Replace as necessary

☐ Improper tappet clearance

Remedy: Adjust tappet clearance as in specification or as required/Replace parts as necessary

☐ Faulty valve timing or late valve timing

Remedy: Service valve/Adjust valve timing/Replace parts as necessary

# Performance Analysis

## Performance Tuning List (ICE)- Specific to (Lack of power output)

☐ Leaky gasket

Remedy: Replace gasket

☐ Muffler clogged or bent exhaust pipe

Remedy: Clean the muffler/straighten the exhaust pipe/Replace parts as necessary

# Performance Analysis

## **Performance Tuning List (ICE) - Specific to (Excessive fuel consumption in ICE models)**

☐ Idling may be incorrect

Remedy: Adjust idling speed and check engine running

☐ Air filter choked

Remedy: Clean properly/ Filament replacement

☐ Clogged air bleeds and jets in carburettor

Remedy: Service carburettor properly/ Replace as necessary

☐ Dysfunction of needle valve in carburettor

Remedy: Clean valve properly/ Replace as necessary

# Performance Analysis

## **Performance Tuning List (ICE) - Specific to (Excessive fuel consumption in ICE models)**

☐ Clutch lever linkage improperly adjusted

Remedy: Adjust properly

☐ Float punctured or damaged

Remedy: Replace float

☐ Float level improperly adjusted

Remedy: Adjust properly

☐ Fuel pump pressure too high

Remedy: Adjust properly by placing packing in seating

☐ Metering rod improper adjustment or worn out

Remedy: Adjust properly/ Replace as necessary

# Performance Analysis

## **Performance Tuning List (ICE)- Specific to (Excessive oil consumption)**

☐ Improper grade of oil used

Remedy: Use oil of standard quality and grade

☐ Leakage from oil sump/drain plug/crank case seating/joint packing/oil filter seating or packing

Remedy: Tighten properly/Needs repair/Needs replacement

☐ Leakage of oil from combustion chamber due to worn out piston rings or cylinder walls

Remedy: Overhauling/ Needs piston ring replacement

☐ Leakage from fuel pump seating, gear cover

Remedy: Tighten properly/ Replace packing

☐ Check holes of ring slots

Remedy: Remove pistons and piston rings & clean properly/ Replace as necessary



# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

**Vehicle Reg No (as applicable):**

**Manufacturer:**

**Model:**

**Variant:**

## Maintenance, Repair and Tuning List (ICE)

[ ] Abnormal noise check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

[ ] Air filter check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Battery electrolyte level check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

[ ] Blinkers, bulbs and head lamps check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Bolts and Nuts tightening check (engine specific)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

[ ] Bolts and Nuts tightening check (front and rear shock absorbers)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Bolts and Nuts tightening check (front and rear tyres)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Brake fluid level check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

[ ] Brake disc condition check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

☐ Brake drum and lining check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Brake liners or pads check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Carburettor check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

☐ Chassis or body condition check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Clutch Pedal Play

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Coolant level check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

☐ Differential oil check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

[ ] Drive belts tension check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Drive shafts check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Engine oil level check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

[ ] Entire electricity cables and connections check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List

☐ Exhaust system check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Fuel Lines Pipes Leakage check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Fuse box and fuses check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Gear Box oil check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

☐ Hoses, clamps and pipes check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Idling and proper acceleration check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Lubrication chart check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Power steering oil check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

☐ Seat and seat bolts check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Steering mechanism and play check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Suspension front and rear check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Tappet clearance check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

[ ] Transmission oil check

Condition; Ok/Problematic but will function/Needs top-up or refilling/Needs replacement

[ ] Trans-axle and axle check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Tyre condition check (rotate if necessary)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Tyre pressure check

Condition; Ok/Problematic but will function/Needs refilling/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair and Tuning List (ICE)

[ ] Cranking/engine sound check while being started (rotate if necessary)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Universal joints and slip joints check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Vehicle pulling, Left wheel / Right wheel wobbling check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Wheel alignment and balancing check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (EV/Hybrid)

☐ Battery Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Brakes / Regenerative Brakes Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Electric Propulsion System Check / Motor Drives Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Switched Reluctance Motor Drives/Induction Motor Drives/Gearing/ Differential Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Power Flow Control / Vehicle Control Unit

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (EV/Hybrid)

☐ HEV Drive Trains

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ EV Chargers

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ EV Subsystems

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Accelerator Pedal Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Steering Wheel Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (EV/Hybrid)

[ ] AC/ AC ECU Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Cabin condition/ Blower Speed Control/ Ventilation System Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HVAC (Industry class) Check

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Accelerator Pedal Check/ Performance Check (in terms of responsiveness when the AC is on)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

The responsiveness of the vehicle to acceleration “changes” when the AC is on due to AC compressor load, causing sudden decrease in power of the engine systems, or noticeable reduction in performance. Also important is that some vehicles have modern disengagement systems where pressing on the accelerator pedal more impactfully can disengage or turnoff the AC till regular acceleration



# Anti lock Braking System (ABS) - Performance, Information, Components and Systems for NSSR-RS

(Applicable for: )

# ABS Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## ABS Vehicle Experience

- ☐ ABS helps safe and effective braking
- ☐ ABS improves control over steering during braking
- ☐ ABS improves control over vehicle during cornering
- ☐ ABS improves tyre life
- ☐ ABS reduces fuel consumption



# ABS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] ABS Control Module / ABS Hydraulic Modulator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ABS Relay

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ABS Hydraulic Actuator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ABS Warning Light

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# ABS Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ ABS Front Wheel (Right and Left Sensors)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ABS Rear Wheel Right and Left Sensors)

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ABS Stop Light Switch

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ABS self-test output

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Traction Control System (TCS) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )

# TCS Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## TCS Vehicle Experience

☐ TCS helps improve contact between the road surface and tyres

☐ TCS helps control unwanted wheel spin

☐ TCS improves control over engine speed and torque

☐ TCS helps vehicle regain grip on skidding

# TCS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] TCS Control Module / TCS Hydraulic Modulator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TCS Control Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TCS Pump assembly

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TCS Wheel Speed sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# TCS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] TCS Throttle Position Sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TCS Throttle Position module Buffer Box

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Throttle Cables

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Throttle Cable Relaxer Motor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



# Electronic Stability Control (ESC) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )



# ESC Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## ESC Vehicle Experience

☐ ESC helps improve stable driving in all directions

☐ ESC improves lateral movement when there can be a difference between the steering input and experienced vehicle movement / direction

☐ ESC improves intervention (in braking and/or in accelerating of driven wheels)

☐ ESC prevents skidding

☐ ESC helps in Hill Control

☐ ESC helps Hydraulic Brake Assist

☐ ESC helps Roll Over Mitigation

# ESC Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ ESC Control Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ TCS Control Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ESC brake intervention actuator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ESC engine intervention actuator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# ESC Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ ESC Wheel Speed Sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ESC Steering Angle sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ESC Yaw-rate sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ESC lateral-acceleration sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Hill Assistance System (HAS) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )

# HAS Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## HAS Vehicle Experience

☐ HAS helps make hill or slope ascent stable

☐ HAS improves hill climbing movement when there can be a difference between the climbing input, or moving in front and experienced vehicle movement / direction

☐ HAS improves synchronism between the accelerator pedal and the brake pedal

☐ HAS helps in Hill Climbing and provides Assisted Control that resists uncontrolled downward movement

☐ HAS helps hold the vehicle in the same location without the use of the brake pedal

☐ HAS prevents skidding and uncontrolled sliding downwards

☐ HAS reduces vehicle accidents

# HAS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the uphill road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] HAS ECU Control Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HAS Accelerator Pedal Position Sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HAS & ESC brake intervention actuator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HAS gear position sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# HAS Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the uphill road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ ABS Control Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Engine Torque detection sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Disc Brakes

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ HAS & ESC descent / incline detection sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



# HAS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the uphill road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] HAS & ESC Wheel Speed Sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HAS & ESC Steering Angle sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] HAS gyroscopic sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Airbag System (SRS) - Performance, Information, Components and Systems for NSSR-RS

(ARAI's review of this section is very important for this mission of road safety)

# Airbag Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Airbag or Supplementary Restraint System in-Vehicle Experience

- ☐ The Airbag or SRS is the Accelerometer type
- ☐ The Airbag or SRS is the Inertia Switch type
- ☐ The Airbag or SRS helps protect the driver and occupants at the time of a collision
- ☐ The Airbag or SRS reduces impact to the driver's chest and face with the steering wheel
- ☐ The Airbag or SRS reduces impact of the co-driver / passenger with the dashboard
- ☐ The sideways Airbags or SRS reduces sideways impact to the upper body and head
- ☐ The Driver side Airbag or SRS is fitted appropriately to the centre of the steering wheel
- ☐ The Co-driver / Passenger side Airbag or SRS is fitted at the dashboard appropriately

# Airbag Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ Airbag Module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Crash Sensors in the engine compartment

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Crash Sensors in the passenger compartment

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Diagnostic Module that monitors the components and wiring harness

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# Airbag Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] Pyrotechnic seat belt tightening system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Airbag ignitor that releases chemicals (Zeronic Potassium Perchlorate) to inflate the airbag

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Clock spring that ensures connection to the air bag even when the steering wheel is turned

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Airbag malfunction warning light

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

Zeronic Potassium Perchlorate: combination of sodium azide and copper oxide that releases Nitrogen gas on being ignited



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Collision Avoidance Warning System (CAWS) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )



# CAWS Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Collision Avoidance Warning System in-Vehicle Experience

- [ ] The Radar calculates the distance between the vehicle and moving object
- [ ] The Visual warning system helps avoid potential collision with the moving object
- [ ] The Audio warning system helps avoid potential collision with the moving object
- [ ] The Timing circuit and pulse generator correctly generates pulses to detect collision possibility
- [ ] The Timing circuit and pulse generator correctly measures distance to the moving object
- [ ] The Timing circuit and pulse generator correctly measures the speed or velocity

# CAWS Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ Low power radar system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Radar (transmitting and receiving) antenna mounted in the front of the vehicle

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Timing circuit and Pulse generator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Microwave oscillator and modulator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# CAWS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] Frequency Difference Amplifier

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Mixer that mixes antenna input with oscillator signal

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Pulse recovery system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Signal Interference measurement system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Autonomous Intelligence Cruise Control (AICC) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )

# AICC Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Autonomous Intelligence Cruise Control in-Vehicle Experience

- ☐ The AICC maintains speed set by the driver
- ☐ The AICC intelligently controls speed to maintain a safe distance from the object moving in front
- ☐ The AICC warning system helps avoid potential collision with the moving object
- ☐ The AICC correctly measures the distance / range of vehicle
- ☐ The AICC correctly measures the speed or velocity
- ☐ The AICC maintains speed in traffic
- ☐ The AICC maintains a safe following distance

# AICC Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] Vehicle Speed sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Headway sensor (radar or lidar) mounted in the front of the vehicle

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Throttle position control sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] Steering angle sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# AICC Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ Brake Actuator

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ AICC related ECU

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Interference Filter module, Analog to Digital Converter, Fourier Transformation unit, Signal processing system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Detector, (Visual and Audio) Warning systems

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement





The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Electronic Suspension Control System (ESC+) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )

# ESC+ Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## Electronic Suspension Control System in-Vehicle Experience

- ☐ The ESC+ improves drive/ride comfort
- ☐ The ESC+ reduces fatigue causing conditions for driver and passenger
- ☐ The ESC+ improves ride and handling of the vehicle
- ☐ The ESC+ reduces risk of pitching, rolling or bouncing of the vehicle
- ☐ The ESC+ correspondingly varies the shock damping to suit the road condition
- ☐ The ESC+ maintains constant height / damping of vehicle reducing the need to adjust headlights etc
- ☐ The ESC+ uses active suspension (outside and inside) actuators for moving in turns

# ESC+ Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] ESC Control module input sensors

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC Control module

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC control for spring setting

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC control for shock damping

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# ESC+ Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] ESC+ Outside Actuators for better turning experiences

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC+ Inside Actuators for better turning experiences

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC Vehicle position and Accelerometer sensors

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] ESC Front (Left and Right) Struts, Rear (Left and Right) shock absorbers

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



## Emergency Braking Assist –

Performance, Information,  
Components and Systems for  
NSSR-RS

Applicable for: )

# EBA Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## EBA Vehicle Experience

- ☐ EBA improves safety and control in driving
- ☐ EBA assists braking on collision risk
- ☐ EBA improves safety in sudden and forceful braking
- ☐ EBA reduces stopping distance
- ☐ EBA works effectively in cross traffic situations
- ☐ EBA assists and improves pedestrian safety



# EBA Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ EBA RADARS

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ EBA Cameras

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Vehicle Speed Sensor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Electronically enabled Braking system/ Emergency Brake Lever

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# EBA Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ Visible/Audible/Haptic Warning Systems

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ EBA Handle-bar Vibration System

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Front and Rear Cross Traffic System / Pedestrian Collision system

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ ECU / ABS

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon



# Automatic Headlamp-On (AHO) - Performance, Information, Components and Systems for NSSR-RS

Applicable for: )

# AHO Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## AHO Vehicle Experience

- ☐ AHO improves safety and visibility in driving
- ☐ AHO turns on automatically when the engine is started
- ☐ AHO turns off only when the engine stops
- ☐ AHO improves visibility at night, in rain, or in fog or in dusty conditions
- ☐ AHO improves rear view mirror visibility of 2 wheeler and its vehicle information
- ☐ AHO does not drain the battery when ON

# AHO Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] AHO Illuminance Sensors

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] AHO Headlight Console integrated strip

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] AHO Control System/Functions

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] AHO Assembly

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# AHO Maintenance, Repair and Tuning

## Guidelines for whether the

☐ vehicle needs to be pulled off the road

☐ vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

☐ High-beam button

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Low-beam button

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Pass switch

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

☐ Daytime Running Lights

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon





# **Tyre Pressure Monitoring Systems (TPMS) - Performance, Information, Components and Systems for NSSR-RS**

Applicable for: )

# TPMS Performance

## Guidelines for safety, driving, and vehicle fitness testing

Vehicle Reg No (as applicable):

Manufacturer:

Model:

Variant:

## TPMS Vehicle Experience

- ☐ TPMS improves handling and stability in driving
- ☐ TPMS alerts when tyre pressure is low or if there is rapid pressure loss
- ☐ TPMS improves safety by reducing the wear of tyre or incidences of a blow-out / punctured tyre
- ☐ TPMS improves fuel efficiency
- ☐ TPMS reduces hydroplaning when an under-inflated tyre loses contact with the road surface in wet conditions
- ☐ TPMS ensures proper stopping distance

# TPMS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] TPMS Tyre Pressure Sensors

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Warning System/Lamp

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Transmission Link

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Signal Processor

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

# TPMS Maintenance, Repair and Tuning

## Guidelines for whether the

[ ] vehicle needs to be pulled off the road

[ ] vehicle needs cost effective repairs to be on-road

## Maintenance, Repair, and Tuning List (Electronic Vehicle Safety Systems)

[ ] TPMS Instrument Panel

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Ignition on status

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Signal Transmitter / Receiver

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement

[ ] TPMS Driver Reset

Condition; Ok/Problematic but will function/Needs maintenance/Needs repair/Needs replacement



The NSSR-RS programme expects to collect unit specific

- ☐ Feedback
- ☐ Complaints
- ☐ Tickets

from senders of the printed pull-out forms that are duly filled, scanned as e-documents and sent via Whatsapp or Email to the mentioned mobile numbers and ID(s) which will be shared soon

# Innovation for automobiles and brands

The NSSR RS Handbook and Pull-outs will help plan for and integrate TGMB CRM activities for

- ☐ Complaints redressal for brand equity or ease of ownership or road safety expectations
- ☐ Product liability details for brand equity or ease of ownership or road safety expectations
- ☐ Product recall, returns for brand equity or ease of ownership or road safety expectations
- ☐ Management of waste and with or without salvaging of items that can be reused/recycled, to manage the issues of Loss of reputation, loss of goodwill, loss in business share, delay or stoppage of supply
- The emphasis for this innovation is to help dealers incorporate **BI/CQI facts based on road safety dashboarding and quality based decision making, relationship management** for the principle for quality control, quality control tools and lean principle tools that reduce gaps for asset accountability, defects, variance, waste in what is seen as responsive & repetitive need for quality emphasis or call to plan emphasis, when the quality standards are not always adherent to multi-regulatory interests.



SOCIAL  
RESPONSIBILITY

NSSR RS  
HANDBOOKS

# NSSR RS HANDBOOK

Road Safety Social Responsibility & on-boarding

USHD SOP

- Pull-out forms or Key opinions scanned and sent

USHD  
Report

Delaying/USHD Dashboards/FMCEA indicators

- USHD score specific roleplay or BI/CQI incorporation

USHD  
Dashboard,  
BI and CQI

- (ISO 9004) specific Reports/Case studies/  
Empirical Studies

- BA or DevOps to Real World Lifecycle

W  
O  
R  
K  
F  
L  
O  
W





# Road Safety Health Card (Front)

The card includes Dial-in numbers and summary for

- (a) A family doctor or physician
- (b) A preferred hospital or nursing home
- (c) Medical history related hospital, nursing home, medical practitioner
- (d) Preferred First-aid or emergency services
- (e) Health and wellness (status, tick as applicable)  
[ ] Normal [ ] Afflicted [ ] Treated and Recovered [ ] Recovering
- (f) Details of any issues/illness/ailment (complete as applicable):

(g) Details of any alpha-assistance as a commuter:

Visual impairment:

Speech impairment:

Hearing impairment:

Multiple sense organs impairment:

# Road Safety Health Card (Back)

The card includes a series of self-declarations if the card is for a person who is a driver of a vehicle

- ☐ Self-declaration on whether the responder is not a traffic rules or norms violator: Yes/No/Not applicable
- ☐ Self-declaration on whether the responder will pay fines for violations: Yes/No/Not applicable
- ☐ Self-declaration on whether the responder would like to control air pollution and fuel consumption: Yes/No/Not applicable
- ☐ Self-declaration on whether the responder will adopt norms or follow recommendations to control air pollution and fuel consumption: Yes/No/Not applicable
- ☐ **Disclaimer:** As social responsibility, social etiquette and commuter behaviour determine the response to incidences affecting an individual, the information available in the Road Safety Health-Card can only universally reduce risk and facilitate decision making.





Work in  
progress with  
stakeholder  
reviews being  
requested