

The background of the slide is a photograph of a large industrial facility, possibly a factory or warehouse, with a high ceiling and structural beams. A semi-transparent blue rectangular overlay covers the middle portion of the image, serving as a background for the text.

# GOV-TECHTHON 2020: VIRTUAL HACKATHON

## AUTOMATION OF VEHICLE FITNESS TEST

A close-up photograph of a vehicle fitness test platform. The platform features a green base with yellow and black diagonal hazard stripes. A black metal frame with a vertical post is visible on the left side of the platform.

**PROBLEM STATEMENT:** Automation of the Vehicle Fitness Inspection process, in accordance with the [Rule no. 62](#) of the Central Motor Vehicle Rules.

 **Users:** Motor Vehicle Inspectors (RTO)

FEATURES/FUNCTIONALITIES



**Secure Login**



**User** (Motor Vehicle Inspector) specific information



**Basic Information of the vehicle** viz. Registration Number, Color, Chassis Number, Engine Number, Body type, etc. along with vehicle age



**Vehicle age validity, vehicle transportation type (transport/non-transport), & vehicle fit up to date** should be calculated automatically, based on vehicle fitness check date.



**Fare Meter Information** (if applicable, for Transport vehicles only)



**Availability of PUC Certificate details** (for non-electric vehicles) & **Speed Limiting Device (SLD)** details, if installed



**Vehicle Parts to be checked during Fitness Test:** Breaks, Tyre condition, Left/Right/Front/Back indicators, Wipers, Head lamps/Tail Lamps, Windshield/Front Glass, Body Finishing, Road worthiness, Emission, Speedo Meter, Steering, Airbags, etc. (refer MoRTH Rule-62 attached in next slides)



**Provision to upload image/video of vehicle**, with usage of lossless compression technique before uploading on cloud storage



**Proximity Sensor**, so that Fitness is carried out (clicking photo) by Motor Vehicle Inspector, within a specified distance from the RTO/Check Post



**Explore usage of Artificial Intelligence, Data Analytics** like technologies while inspecting tire condition/ head lamps/tail lamps/broken windshield/ side mirrors/ front wipers, to predict the vehicle fitness



INDICATIVE



## SAMPLE 1- Vehicle Fuel Master Table

Fuel ID (Integer)	Fuel Description (String)
1	Electric
2	Petrol

## SAMPLE 2- Vehicle Class Master Table

Vehicle Class ID (Integer)	Vehicle Class Description (String)
1	Goods Carrier
2	Three Wheeler

## SAMPLE 3- State Master Table

State Code (String)	State Name (String)
DL	Delhi
HR	Haryana

DETAILS\*



Tables with  
Schema & Data

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# SAMPLE USER SCREENS

PROBLEM  
STATEMENT

DATASETS

USER INTERFACE

FORMATS/  
DOCUMENTATION

SUGGESTIONS

Entry of Application No./Registration No.

Fitness Inspection Screen with various parameters



# DOCUMENTATION, FORMATS (RULES)

INDICATIVE

## KEY DOCUMENTATION



System Requirement Specifications (SRS)



Functional Requirement Specifications (FRS)



Business Requirements Document (BRD)



User Manual

PROBLEM STATEMENT

DATASETS

USER INTERFACE

FORMATS/ DOCUMENTATION

SUGGESTIONS

## VEHICLE FITNESS SPECIFIC RULES (RULE-62)\*



VEHICLE  
FITNESS\_RULE 62

Page 1

RULE 62

THE CENTRAL MOTOR VEHICLES RULES, 1989 49

### 61. Termination of hire-purchase agreements, etc.

(1) An application for making an entry of termination of agreement of hire-purchase, lease or hypothecation referred to in sub-section (3) of section 51 shall be made in Form 35 duly signed by the registered owner of the vehicle and the financier, and shall be accompanied by the certificate of registration and the appropriate fee as specified in rule 81.

(2) The application for the issue of a fresh certificate of registration under sub-section (5) of section 51 shall be made in Form 36 and shall be accompanied by a fee as specified in rule 81.

(3) Where the registered owner has refused to deliver the certificate of registration to the financier or has absconded then the registering authority shall issue a notice to the registered owner of the vehicle in Form 37.

### Certificate of Fitness

### 62. Validity of certificate of fitness

(1) A certificate of fitness in respect of a transport vehicle granted under section 56 shall be in Form 38 and such certificate when granted or renewed shall be valid for the period as indicated below :

(a)	New transport vehicle	Two years
<sup>1</sup> [(b)]	renewal of certificate of fitness in respect of transport vehicles	Two years for vehicles up to eight years old and one year for vehicles older than eight years.]
<sup>2</sup> [(ba)]	Renewal of certificate of fitness in respect of E-rickshaw and E-cart	Three years]
<sup>3</sup> [(c)]	Renewal of certificate of fitness in respect of vehicles covered under rule 82 of these rules	One year
(d)	Fresh registration of imported vehicles	Same period as in the case of vehicles manufactured in India having regard to the date of manufacture:]

<sup>4</sup>[PROVIDED that the renewal of fitness certificate shall be made only <sup>5</sup>[after an Inspecting Officer] or authorised testing stations as referred to in sub-section (1) of section 56 of the Act] has carried the tests specified in the Table given below, namely:—

<sup>1</sup> Substituted vide GSR 1081(E), dt. 2-11-2018, w.e.f. 2-11-2018 Prior to substitution, clause (b) read as under:  
" (b) Renewal of certificate of fitness in respect of vehicles mentioned in (a) above One year"  
<sup>2</sup> Inserted vide GSR 709(E), dt. 8-10-2014, w.e.f. 8-10-2014.  
<sup>3</sup> Omitted vide GSR 1081(E), dt. 2-11-2018, w.e.f. 2-11-2018.

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## VEHICLE FITNESS SPECIFIC RULES (RULE-62)

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### 50 THE CENTRAL MOTOR VEHICLES RULES, 19189

### RULE 62

<sup>1</sup>TABLE

Sl. No.	Item	Check Fit-ment	Check make/type/rating etc. as per original equipment re-commendations	Check conditions	Check Function-ing	Test	Remarks
1	2	3	4	5	6	7	8
(1)	Spark Plug/ Suppres-sor cap/ High Tension cable	Yes	Yes	Yes	No	No	—
(2)	Head Lamp Beams	Yes	No	Yes	Yes	Check	(a) Beam focus as per Annexure VII; (b) in case of authorised testing station using headlight tester, testing procedure and requirement shall be as per AIS-128:2014
(3)	Other Lights	Yes	No	Yes	Yes	No	Also ensure that unauthorised lights are not fitted
(4)	Reflectors	Yes	No	Yes	No	No	Ensure colour of reflectors and reflective tapes are as per rule 104
(5)	Bulbs	Yes	Yes	Yes	No	No	Ensure that head light bulbs wattage, especially halogen, is not higher than those indicated in IS 1606-1993 and also ensure that halogen bulbs with P45t caps are not used in all vehicles
(6)	Rear View Mirror	Yes	No	Yes	No	No	

### RULE 62

### THE CENTRAL MOTOR VEHICLES RULES, 1989 51

(7)	Safety Glass	Yes	Yes	Yes	No	No	Laminated windscreen glass is used for vehicles manufactured from April, 1996 onwards
(8)	Horn	Yes	No	Yes	Yes	No	—
(9)	Silencer	Yes	No	Yes	Yes	No	Ensure no leakage
(10)	Dash Board equip-ment	Yes	No	Yes	Yes	No	—
(11)	Wind shield wiper	Yes	No	Yes	Yes	No	—
(12)	Exhaust emission	No	No	No	No	Yes	Pollution Under Control Certificate
(13)	Braking System	Yes	No	Yes	Yes	Yes	(a) As per rule 96(8); (b) in case of authorised testing station using roller brake tester, testing procedure, and requirements shall be as per AIS-128:2014
(14)	Speedo-meter	Yes	No	Yes	Yes	No	As per rule 117
(15)	Steering gear	Yes	No	Yes	Yes	Check free play	Check freeplay as per rule 98 for vehicles with steering wheel.]
<sup>1</sup> [(16)	Rear Under run Protecting Device For N2, N3, T3 and T4	Yes	No	Yes	No	No	As per rule 124(1A)
(17)	Lateral Side Protection Device For N2, N3, T3 and T4	Yes	No	Yes	No	No	As per rule 124(1A)]





## VEHICLE FITNESS SPECIFIC RULES (RULE-62)

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### RULE 62

<sup>1</sup> [(18)	Fastag	Yes	Yes	Yes	No	No	To be affixed on the front wind screen]
<sup>2</sup> [19.	Priority Seats, Signs, securing of crutches/ canes/ walker, hand rail/ stanchions, controls at priority seats for differently abled passengers and passengers with reduced mobility.	Yes	No	Yes	Yes	No	Ensure that the provisions of sub-rules (1) and (7) of rule 125C of the Central Motor Vehicles Rules, 1989 are complied with]
<sup>3</sup> [20.	Wheel chair entry/ housing/ locking arrangement for wheel chair for differently abled passengers and passengers with reduced nobility	Yes	No	Yes	Yes	No	Ensure that the provisions of sub-rules (1) and (7) of rule 125C of the Central Motor Vehicles Rules, 1989 are complied with]

<sup>4</sup>[PROVIDED FURTHER that in case of E-rickshaw and E-cart, the renewal of fitness certificate shall be made only after carrying out tests specified in the Table given below:—

### RULE 62

### THE CENTRAL MOTOR VEHICLES RULES, 1989 53

<sup>1</sup> [TABLE							
Sl. No.	Items	Check Fitment	Check make or Type rating, etc. function as per original equipment recommendation	Check conditions	Check functioning	Test	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Maximum speed	No	No	No	No	Yes	The vehicle shall be driven in unladen condition (with full charge and at full accelerator position) on straight or flat road and when the vehicle attains full speed, the maximum speed shall be calculated by measuring time taken to travel fixed distance (say 50 metres)]
2.	Reflectors	Yes	No	Yes	No	No	Ensure Colour of the reflectors and reflective tapes are as per rule 104]

<sup>2</sup>[PROVIDED ALSO that if the tests specified in the Table under the first proviso are conducted by an Inspecting Officer or authorised testing station in a State/Union Territory other than the State/Union Territory where the vehicle is registered, the Inspecting Officer who conducted the tests shall, on the same day or on the following working day, upload his inspection report in Form 38A at the portal <http://parivahan.gov.in/vahan> and also send the inspection report signed under his hand and seal to the registering authority by speed post for issue of certificate of fitness by the registering authority within fifteen days from the date of the inspection report, if the vehicle is found by the Inspecting Officer to be in compliance with the provisions of the Act and rules and a copy shall be given to the driver of the vehicle:

PROVIDED ALSO that the next fitness certificate is obtained from the inspecting officer or an authorised testing station in the State/Union Territory of the registering authority where the vehicle is registered.]

Explanation : "Inspecting Officer" means an officer <sup>3</sup>[appointed by a State Government] under section 213 of the Act:]

<sup>1</sup> Inserted vide GSR 1081(E), dt. 2-11-2018, w.e.f. 2-11-2018.





## FORMATS (FORMS)

PROBLEM  
STATEMENT

DATASETS

USER INTERFACE

FORMATS/  
DOCUMENTATION

SUGGESTIONS

### FITNESS FORM (FORM 38)\*



FORM 38

#### FORM 38

*[Refer Rule 62(1)]*

#### CERTIFICATE OF FITNESS

(Applicable in the case of transport vehicles only)

Vehicle No. .... is certified as complying with the provisions of the Motor Vehicles Act, 1988, and the rules made thereunder. The certificate will expire on .....

Date .....

.....  
Signature and designation of inspecting authority  
or holder of the letter of authority of  
the authorised testing station.

The certificate of fitness is hereby renewed :

From.....to..... 20 .....

From.....to..... 20 .....

From.....to..... 20 .....

Signature of inspecting authority or the holder of the  
letter of authority of the authorised testing station

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## SAMPLE FITNESS CERTIFICATE\*



### FITNESS CERTIFICATE

#### TRANSPORT DEPARTMENT, GOVT. OF NCT OF DELHI

State Transport Department  
ZONAL OFFICE, NORTH ZONE, MALL ROAD  
FORM 38

[See Rule 62(1)]

#### CERTIFICATE OF FITNESS

(Applicable in the case of transport vehicles only)



Vehicle No: DL1ERB1397 (Three Wheeler (Passenger)) is certified as complying with the provisions of the Motor vehicles Act, 1988 and the rules made there under.

Certificate will expire on : 21-Jan-2022

Next Inspection Due Date : 23-Nov-2021

Inspection Fee Receipt No : DL11701I00000101

Application No : DL18022800088007

Receipt Date : 23-Sep-2015

Chassis No : WBACR6705KLP60287

Engine No : 0181Y235

Seating Capacity : 5 (Including Driver)

Type of Body : STATION WAGON

Registration No : DL1ERB1397

Category of Vehicle : 3WT

Remark: DSF

Inspected by : DL TESTING

Manufacturing Year : 2019

Inspected on : 22-Jan-2020

Inspected by : PAWAN KR

Printed on: 27-Jul-2020 12:45:47

Signature of Inspecting Authority  
ZONAL OFFICE, NORTH ZONE, MALL ROAD

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## KEY SUGGESTIONS

PROBLEM  
STATEMENT

DATASETS

USER INTERFACE

FORMATS/  
DOCUMENTATION

SUGGESTIONS

**Incorporation of advanced/innovative features and functionalities, to the extent possible**

**Solution to be high on user friendliness**

**Cost effective**

**Secure & robust solution**

**Easily scalable to be cater to increase/decrease in number of users, load, etc.**





**Thank You !**