II. Technical Specification For "Desktop car simulator

1.0 Bidder Eligibility Criteria: I

1.0	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16th September 2020 and other subsequent orders issued therein.			
2.0	**Bidder Eligibility Criteria-II**	**Complied / Not Complied**		**Reference Page No.**
1	The bidder/OEM should have supplied at least 3 similar simulator to IITs, NITs, IISERs, CSIR Labs or other Govt. organizations in the last 10 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

3.0 Technical Compliance:

1) Hardware For simultor - The simulator should consist of the following hardware components:

S.No	Technical Specification	Complied / Not Complied	Reference Page No.
1	A desktop car simulator with steering wheel including brake, clutch, gear shift lever, acceleration pedal, switches for turn indication, horn and ignition key socket.		
2	Virtual / digital instrument panel with speedometer, rev counter, gear indicator, low/hi beam indicator, and turn indicator. Option to show / hide any of the above.		
3	A synchronized audio feedback system should also be enabled with this simulator. The audio system should emulate wind, tire, engine, surrounding traffic sounds and other sounds in the environment. A surround sound system emulating the distance of sound source especially for honking of horns and traffic noise is preferred to provide a more immersive experience.		
4	An integrated simulator workstation with advanced graphics cards and operator system for scenario control.		
5	Three monitors for visuals on road and environment.		

2)Software specifications:

S.No	Technical Specification	Complied / Not Complied	Reference Page No.
1	The software should have a graphical user interface (GUI) for design of various driving scenarios with different road conditions (number of lanes, road geometry, median and shoulder types), terrains, traffic levels, land-use type		

		Complied / Not Complied	Reference Page No.
	(urban, rural, commercial, residential etc) and time of day.		
2	Traffic facilities such as signs, signals, road markings, ramps must be allowed and the configuration of such facilities must be possible based on user needs through easy to use GUI.		
3	Scenario control should include ambient traffic simulation, scriptable events, relational behaviours and environmental controls.		
4	The simulator software should have following categories of vehicle types (two-wheeler, auto-rickshaw, cars, LCV, HMV, bus etc.) to represent Indian traffic conditions.		
5	The software be capable to mirror Indian traffic behaviour.		
6	It is desirable that the software allow user-defined events such as pedestrian crossing, lane changing, congestion formation, work zone and weather such as clear daylight, rain, fog, mist and snow		
7	The software should be compatible with latest version of MS Windows based operating system.		
8	The software and OS should be capable of integrating with similar simulators in future to form a network of simulators. The software should be capable of allowing multi-player interactions.		
9	Extensive and comprehensive data collection/performance measurement functions with capability of providing output in multiple formats (such as video, standard CSV/Excel file, text file etc.) for the following parameters at a minimum of 5 hertz: Simulation time § Subject vehicle: Engine RPM, Gear, Brake pedal force & Steering position. § Subject vehicle: Acceleration, Lateral acceleration, Speed, Velocity, Lateral velocity & Vertical velocity. § Subject vehicle: Heading, Slip front, Slip rear, Head-way distance, Head-way time, Tail-way distance & Tail-way time. § Subject vehicle: X position, Y position, Z position, Yaw, Pitch, Roll & Lane number. § At conflict points - Each Subject Vehicle and Autonomous Vehicle: • Speed of the vehicle • Time instant at which the vehicle enters the junction / intersection / conflict zone • Distance between subject vehicle & autonomous vehicle		

3)Integration

S.No	Technical Specification	Complied / Not Complied	Reference Page No.
1	All the hardware, software, motion platform, and visual display should be integrated and work seamlessly with no perceptible lags		
2	The simulator should be capable of working in future with vehicle dynamics software. The actual integration will be part of a future tender and the integration cost need not be included in the quote.		
3	The system should be capable of working in future with traffic simulation software. The actual integration will be part of a future tender and the integration cost need not be included in the quote.		
4	The new system should Integration with existing system including all software and hardware components to provide realistic force feedback on the steering.		
5	The simulator must be capable of working in future with other similar simulators to form a network of simulators over the Internet		
6	The vendor must demonstrate the capability of the system to handle multi-player interactions		

ADDITIONAL TERMS AND CONDITIONS			
1.	**Warranty**: The vendor must provide a warranty of minimum 3 years and support for maintenance after 3 years may be quoted separately as both a fee for a period and as fee for every contact.		
2.	All the instructions and controls of the simulator should be in English language		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the above points with document proof as required. Failing which bidders will be technically disqualified)

SIGNATURE OF BIDDER ALONG WITH
SEAL OF THE COMPANY WITH DATE