Mandatory Specifications of Digital Platform Hardware in Loop System: One unit

Items Details	Description	Qty	Remarks
Real-Time Simulator Chassis	Simulator Chassis should be 19" rack-mountable it should have minimum specifications given below	01	
	a. Powerful target computer, with Multi-Core Processor, Minimum Quad-core		
	b. Minimum supported speed 3.1GHz		
	c. Supported SSD, Minimum 120 GB		
	d. Supported DDR RAM, minimum 8 GB		
	e. Should have the LED indicators for synchronization status, target computer status etc.		
	f. Should have 4 sockets Small Form-factor pluggable 1-to 5Gbits optical interface		
	g. Should have 6 Ch encoder and 6 ch decoder		
Analog Input	16 Ch with 16 bits, 2.5 us conversion time, all channels simultaneously sampled. ±16 V Differential Input. Conversion time should be directly controlled by the FPGA	02	
Analog Output	16 Ch with 16 bits, 1 us update time, all channels simultaneously. ±16 V. short circuit protected, update time directly controlled by the FPGA	02	
Digital Output	32 channel, Push-pull type, 40 ns propagation delay. 5V to 30V, short circuit protected, Galvanic isolation, 8 channels can be configured as encoders or other application requiring the generation of fast differential logic signals.	02	
Digital Input	32 channel, Push-pull type, 40 ns propagation delay. 5V to 50V, short circuit protected, Galvanic isolation with Optocoupler, 8 channels can be configured as decoders or other application requiring the generation of fast differential logic signals.	02	
FPGA	Should have Xilinx Kintex7 FPGA to drive the I/O and also should support for computation	02	
	Should provide FPGA based high fidelity Motor Models for studies		
Supporting	All supporting softwares to work with FPGA and processor should be		RT-XSG,

Softwares	provided		etc software
SFP Communication	SFP communication and Optical cable should be provided to interface with multiple units to run one large simulation	01	
IO Expansion Chassis	Chassis should have provision to mount the Analog and Digital Cards Should have an FPGA to drive the IO Lines Should be connected to Real-Time Simulator Should have the 4 SFP ports for Expansion Should have the PCIe connector Should have a slot for the expansion.	01	
Miscellaneous	Necessary connectors, cables and hardware accessories should be provided		

Other requirements and eligibility criteria

1. The supplier should have installed and maintained similar systems at various IITs or NITs or other research labs in India
2. The supplier should be in position to demonstrate at IITM if asked by the technical committee.
3. The supplier should provide after-sale support
4. The supplier should provide demo examples and complete manual of the system
5. The supplier should do the installation and training at IIT Madras.
6. The supplier should provide the description in detail with compliance statement.
7. Warranty: at least three years on complete Digital Platform Hardware in Loop System. The warranty should commence from the date of installation.