



भारतीय प्रौद्योगिकी संस्थान तिरुपति
Indian Institute of Technology Tirupati
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Tender No. IITT/EU/2022-23/30

09th June, 2022.

NOTICE INVITING TENDER FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF HIGH PERFORMANCE PARALLEL REDUNDANT UPS SYSTEMS WITH BUILT-IN/EXTERNAL GALVANIC ISOLATION TRANSFORMERS

(E-PROCUREMENT MODE ONLY)

Indian Institute of Technology Tirupati (IIT Tirupati) invites online bids (e-tender) in Two bid system from only eligible Class-I & Class-II suppliers only in line with Government Public Procurement order No. P-45021/2/2017-BE-II dated: 04.06.2020 for the following:

Sl. No	Item Description	Quantity (approx.)	Tender Fee (Inclusive of all taxes in Rs.)
1	Supply, installation, testing and commissioning of 2x250kVA, High performance Parallel Redundant with built-in / external Galvanic Isolation transformer (Cast Resin Dry Type) UPS, fully digital and microprocessor controlled along with SMF batteries for providing 20 minutes backup (common battery bank connected 2sets of batteries in parallel mode with each UPS System) (2x250kVA), with battery rack, battery inter link cables, DC Cable, Battery Isolators etc.	4Sets	2500/-
1.1	Single-core, 150 sq.mm, Multi-strand FR PVC (or better) insulated copper conductor cables	240mtrs	
1.2	Single core, 120 sq.mm, Multi-strand FR PVC (or better) insulated copper conductor cables	360mtrs	
1.3	electrolytic grade annealed bare copper earth strips of size 25 X 3 mm	80kgs	
2	Supply, installation, testing and commissioning of 2x120kVA, High performance Parallel Redundant with	2Sets	

	built-in / external Galvanic Cast Resin Dry Type Isolation transformer UPS, fully digital and microprocessor controlled along with SMF batteries for providing 20minutes backup (common battery bank connected 2sets of batteries in parallel mode with each UPS System) (2x120kVA), with battery rack, battery inter link cables, DC Cable, Battery Isolators etc.		
2.1	Single core, 150 sq.mm, Multi-strand FR PVC (or better) insulated copper conductor cables	60mtrs	
2.2	Single core, 120 sq.mm, Multi-strand FR PVC (or better) insulated copper conductor cables	100mtrs	
2.3	electrolytic grade annealed bare copper earth strips of size 25 X 3 mm	40kgs	
	Total		2500/-

- Bidder(s) can quote for item 1 or 2 or both item(s) based on the eligibility criteria.
- L1 will be decided on item wise quoted prices for item 1 & 2.

The Tender Document can be downloaded from Central Public Procurement (CPP) Portal <http://eprocure.gov.in/eprocure/app> and bid is to be submitted online only through the same portal up to the last date and time of submission of tender.

Critical Dates of Tender:

SL NO	PARTICULARS	DATE	TIME
01	ONLINE PUBLICATION/DOWNLOAD OF TENDER	09.06.2022	18.00 hrs
02	CLARIFICATIONS START DATE	09.06.2022	18.00 hrs
03	CLARIFICATIONS END DATE	16.06.2022	18.00 hrs
04	UPLOADING OF CORRIGENDUM/CLARIFICATIONS AFTER THE RECEIPT OF QUERIES (IF ANY)	20.06.2022	18.00 hrs
05	BID SUBMISSION START DATE	21.06.2022	10.00 hrs
06	BID SUBMISSION DEADLINE	05.07.2022	15.00 hrs
07	TECHNICAL BID OPENING	06.07.2022	15.00 hrs
08	OPENING OF THE FINANCIAL BID	To be announced later	
<ul style="list-style-type: none"> • QUERIES RELATED TO THE TENDER DOCUMENT MAY BE FORWARDED TO aeelectrical1_eu@iittp.ac.in with cc to purchase@iittp.ac.in AS PER THE FORMAT PROVIDED IN THE ANNEXURE-16 BEFORE THE CLARIFICATIONS END DATE. FURTHER QUERIES AFTER 16.06.2022@18.00 HRS WILL NOT BE CONSIDERED. 			

1.0 ABOUT IIT TIRUPATI:

Indian Institute of Technology Tirupati (IIT Tirupati) is an Autonomous Institute under Ministry of Education, Govt. of India.

2.0 TECHNICAL SPECIFICATIONS: SCHEDULE OF REQUIREMENT

ITEM 1:

SPECIFICATIONS OF 2 x 250 KVA PARALLEL REDUNDANT ON-LINE UNINTERRUPTABLE POWER SUPPLY SYSTEM

Supply, Installation, Testing and Commissioning of 4 sets of 2x250 KVA Parallel Redundant On-Line Uninterruptable Power Supply System (UPS) with Microprocess Controlled along with Sealed Maintenance Free Batteries for providing 20 Minutes Back-Up, complete as per the Technical Specifications and Features furnished below.

1. SCOPE:

The scope of the work for True on-line, double conversion, fully Microprocessor based parallel redundant UPS System includes configuration finalization in accordance with this specification, shall include design, manufacture, fabrication, assembly, pre-shipment testing at supplier's works, proper packing for transportation delivery at site, unloading, storage, erection, interconnection of related equipments, calibration, testing, commissioning and putting the UPS System together with all accessories and auxiliaries as specified hereinafter in a fully operational condition acceptable to the Institute.

The bidder shall be responsible for engineering and providing all materials, equipment's and services specified or otherwise, which are required to fulfill the intent of ensuring operability, maintainability, completeness and reliability of the total work covered under this specification within the quoted price.

2. STANDARDS:

The design, manufacture, inspection, testing and installation of the UPS System covered under this specification shall conform to the latest editions of codes and standards as applicable. This specification covers the general design and requirement of On-Line Uninterruptable Power Supply System for efficient and trouble-free operation. The equipment covered by this specification shall unless otherwise stated, be designed, constructed and tested in accordance with the latest revisions of relevant standards.

3. OPERATION PRINCIPLE:

The main elements of UPS shall consists of IGBT Rectifier with PWM controller, IGBT Inverter with PWM controller, static bypass switch, service bypass with suitable rated SMF batteries for energy storage.

The rectifier output shall be converted by the inverter into 3Phase AC which shall supply the connected load with constant voltage and frequency through galvanic cast resin dry Type isolation transformer connect at output side of the inverter.

In the event of mains failure, the battery shall feed power to the loads through the inverter. The rectifier shall be designed such as to supply the inverter as well as charge the battery.

Service/maintenance by pass shall permit easy maintenance to be carried out.

4. DESCRIPTION:

The UPS shall be True ON Line, Double conversion type, capable of working in standalone, hot standby and parallel redundant configuration.

The control circuits shall be digital signal processor based and shall be controlled by internal software.

The UPS shall be able to accept an input voltage range of $400 \pm 20\%$ (320V-480V) at full load and up to with a frequency range of 45-55 Hz.

The constant output voltage and frequency of UPS shall be as specified in Guaranteed Technical Particulars (GTP) and Single Line Diagram (SLD). The UPS should work with Static Bypass disable/enable modes. In the event of static bypass disability output frequency of the UPS should be 50Hz.

The Rectifier/charger shall be fully Digital Signal Processor based, temperature compensated type. Input Current harmonics shall be restricted to $<3\%$ and power factor should be maintained at >0.99 . The rectifier shall be provided with fuse protection.

The Ripple voltage shall be restricted to less than $\pm 1\%$.

The rating of the rectifier shall be such that it shall not take more than 8 hrs to charge batteries after full discharge.

The inverter shall be fully Digital Signal processor-based vector control technique with IGBTs.

The efficiency of the UPS along with (built-in/external) galvanic isolation transformer output shall be above 95% at 50% to 100% load condition and better than 94% even at 25% load.

In case of external Galvanic Isolation transformer, bidder need to supply, Indoor type, for connecting output side of IGBT based UPS systems. Since two UPS modules are connected in parallel, the transformers are also having identical design and position such a way along with UPS, looks like a single cabinet. Connection of UPS and Transformer should be on vendor's scope. The external Isolation transformer/Isolation transformer connected after static bypass of the UPS should have inbuilt Auto Soft start facility, copper wound, maintenance bypass, input and output MCCBs. The isolation transformer and MCCBs and connection cable should capable to withstand overload capacity as mentioned for UPS specification. The UPS and external isolation transformer need to connect through proper rating flexible copper cable. The bidder should attach the SLD along with their bid.

In case of input supply phase reversal, the system should not trip and should not go to battery. It should work on mains with alarm indication. It should be in-built feature of the system

The UPS shall be provided with static bypass switch and transfer to bypass and re-transfer shall be automatic. Bypass transfer inhibit switch to be provided to disable bypass for each unit.

The total voltage harmonic distortion at 100% non-linear load shall be less than 3% and the THD for 100% linear load shall be less than 2%.

The phase displacement for shall be 120 ± 1 deg.

The UPS shall be capable of withstanding an overloading of 125% for 10 minutes and 150% for 1 minute and 1000% for 20 milliseconds (through static by pass)

Built-in Galvanic Isolation between each 250 kVA UPS output and load to be provided.

The UPS shall be provided with the following protection.

Over Load

Short Circuit

Input Low Voltage

Output Over Voltage

Battery over charging

Battery over discharging.

Input Surge Protection for sustaining input surges without damage to the system as per standard.

5. CONTROL AND INDICATION:

The UPS shall be provided with a control panel for alarm and annunciation of the UPS faults. Also, it should be able to store minimum 100 history events. The following alarm and annunciation shall be provided.

Alarm

- i. Mains Failure
- ii. UPS Fault
- iii. Battery Discharged
- iv. Inverter off/Failed
- v. Rectifier Off/Failed
- vi. Over Temperature
- vii. Over Load
- viii. Emergency Stop

Annunciation/ Indication

- i. Input Voltage
- ii. Input current per phase
- iii. Bypass input voltage
- iv. Bypass input frequency
- v. Inverter output voltage
- vi. Inverter output current per phase
- vii. Input, output and bypass frequency
- viii. Percentage of load at the inverter output
- ix. Inverter output power factor
- x. Inverter output in KVA and KW
- xi. DC Voltage
- xii. Battery Current.

UPS system shall be provided with serial RS232, SMS to mobile phone (Alerts) and BMS connectivity.

6. DEGREE OF PROTECTION:

The degree of protection for the enclosure shall be IP20 or more.

7. COOLING METHOD:

Cooling method shall be by forced air with integral fans.

8. CREST FACTOR:

For meeting sensitive electronic loads drawing non-linear currents, UPS shall be with a crest factor of 3:1

9. BATTERIES:

All the batteries shall be supplied, installed, tested and commissioned at site as required and as directed by the site Engineers. The batteries shall be of Sealed Maintenance Free batteries and shall provide a backup for 20 min. While calculating battery sizing, consider the following factors.

End of cell voltage 1.7 V, System rating (250 kW), Design margin 10%, Aging factor 25%, Inverter efficiency 95%, Temperature correction factor @27 degree C. Bidder should provide battery Ah calculation sheet along with wattage supporting documents from the battery manufacturers. **Minimum VAH required is 2,88,000.**

Common Battery Bank Configuration: Both (2Nos) Battery banks shall be connected in parallel. Each Battery Bank should be sized for a backup time of minimum 10 minutes on a 250kVA/250kW load. When the Battery banks are working in parallel, sizing should be done to achieve a backup time of minimum 20 minutes on 250kVA/250kW load. SLD to be referred for the battery connections with UPS.

In UPS parallel redundant mode, when one of the UPS fails, both the battery back should work parallel and cater to the entire 250kVA/250kW load with a backup time of minimum 20 minutes on 250kVA/250kW through the second UPS.

Battery Stand:

Suitably designed with appropriate material & size battery stand shall be supplied and installed at site. All batteries shall be positioned on the above stand, interconnected and commissioned.

10. BATTERY DISCONNECT BREAKER

Each UPS module shall have a properly rated circuit breaker to isolate it from the battery. This breaker is to be in a separate enclosure and fixed on the battery stand itself. When open, there shall be no battery voltage in the UPS enclosure. Each UPS module shall automatically be disconnected from the battery by opening its breaker when the battery reaches the minimum discharge voltage level or when signalled by other control functions.

11. DRAWINGS & DOCUMENTS:

The following drawings and documents shall be furnished.

- a. General arrangement drawing showing

- i. Overall dimensions
- ii. Total Weight
- iii. Section View
- iv. Bill of material
- b. Manufacturing schedule & Test schedule
- c. SLD for Main AC circuits, Main blocks and connections
- d. Schematics for Battery fuses/switches and number of battery units
- e. Protocol of functional tests and measurements.

12. TECHNICAL DATA:

INPUT:

- i) Three Phase Voltage : 400 V \pm 20%
- ii) Supply Frequency : 45 to 55 Hz.
- iii) Input Power Factor : >0.99 from 25% to 100% load
- iv) Input current distortion/Harmonics : <3% at 100% load, <5% at 50% load
- v) Rectifier Technology : IGBT with PWM technology.

BY-PASS LINE:

- i) Three Phase Voltage : 400 V \pm 20%
- ii) Over load capacity for 1 min : 150%
- iii) Over load capacity for 10 min : 125%

OUTPUT:

- i) Inverter Technology : IGBT with PWM Technology
- ii) Voltage Three Phase : 415 V and should be selectable to 380 or 400 Volts.
- iii) Voltage Stability : + 1% Static, + 3% dynamic
- iv) Wave Form : Sinusoidal with 2% total harmonic distortion
- v) Frequency : 50 Hz + 0.05Hz.
- vi) Crest factor : 3:1
- vii) Accepted over load : 110% for 60 min., 125% for 10 min., 150% for 1 min. (at 250 KVA/250 KW)
- viii) Power in KVA : 250 KVA
- ix) Power in KW : 250 KW

13. SYSTEM:

1. Total Efficiency of the UPS (AC-AC) including inverter output Galvanic Cast Resin Dry Type Isolation transformer: more than 95% at 50% to 100% of load and more than 94% even at 25% load.

2. Standard RS 232 interface facility should be provided, SMS to mobile phone (Alerts) and BMS connectivity.

3. Battery AH calculation should be enclosed along with the bid.

14. GENERAL CONDITIONS FOR TENDERERS:

The tenderers shall quote only for high reliability UPS System with all technical details.

The requirement is for 'Parallel Redundant UPS System' 3 phase 4 wire 400V/ 50Hz. The specifications given in pre-pages are only for guidance of the bidders. The bidders shall quote for their systems offered with details of various protections, annunciations, controls, scheme etc., with relevant details for each part separately.

Detailed schematic drawings for all the components (not block diagrams) shall be sent along with the offer with technical write up.

Institute will provide **incoming and outgoing power panel near** to the system and also necessary **earthing** for both neutral and body. The rest of the work including necessary inter connecting wires / cables etc., is under the scope of the Bidder as mentioned above. Distance between incoming panel to UPS would be 10 meters and distance between UPS to output panel is 10 meters. Bidder need to use Finolex / or equivalent Single core multi-strand copper cable with copper lugs properly crimped and terminated at UPS and Panels side (need to provide cables for 3 Phases and Neutral).

All the components of the system shall be suitable to withstand the worst humid conditions.

The system offered shall have high MTBF and reliability and very low MTTR. Make and performance characteristics of the sealed maintenance free Lead acid battery selected along with the selection calculation details shall be furnished. Power loss of the system under no load as well as full load conditions shall be indicated.

Spare potential free contacts for all monitoring shall be brought out for remote monitoring of the parameters away from the location of the system.

The bidder should submit an indicative schematic diagram and layout with dimensions with all major components offered by them.

15. WARRANTY:

System supplied (excluding Battery bank) shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores **or** 60 months from the date of commissioning of the unit at site for trouble free and satisfactory performance.

Whereas Battery bank shall be covered for a minimum warranty period of 26 months from the date of receipt of the material at our Stores **or** 24 months from the date of commissioning of the unit at site for trouble free and satisfactory performance.

The successful tenderer should deposit the performance security valid for **63 Months** in the form of DD / TDR / FDR / Bank Guarantee @ **03% (three percent) of the total order value** at the earliest from the date of commissioning of the items. No interest will be paid by IIT Tirupati on the deposit.

16. INSTALLATION, COMMISSIONING & DOCUMENTATION:

UPS systems, Battery banks and associated auxiliary systems shall be installed as per manufacturers guidance and as per standard practice and as per the requirements of IIT Tirupati at site.

After satisfactory installation and pre-commissioning tests, the UPS may be commissioned. The following documents each 3 copies are to be provided for the UPS system, Battery and other accessories.

- i) Operation & Maintenance instruction manual.
- ii) Service manual with detailed power and control wiring diagram,
- iii) Routine and type and commissioning test reports.
- iv) Software with License for interfacing to remote PC
- v) Other relevant documents.

17. TRAINING:

The bidder shall arrange free of cost training to our Dept staff at site.

18. INSPECTION & TESTING:

- i) Type test certificates for UPS system (preferably along with the tender) from the Labs accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories) for the offered UPS model. The type test report can be submitted of any rating between 200 KVA and 300 KVA with the output cast resin transformer (built-in / external) of the model offered.

NOTE: The successful bidder should submit the Type test report for the rating between 200 KVA and 300 KVA with the output transformer (built-in) of the model offered before calling for Factory inspection. If the Isolation Transformer offered externally/after static bypass then Type test report for Isolation Transformer (should be submitted along with the tender) from the Labs authorised by the Govt. for the offered Isolation transformer.

- ii) Necessary routine tests shall be conducted in presence of IIT Tirupati representatives. All routine tests as per standards shall be conducted, for proper functioning of the equipment.
- iii) If the Institute wish to visit any of the vendor's customer site location, vendor need to arrange the site visit where parallel redundant UPS is working for the offered model and rating should be 200 kVA and above.
- iv) If required, the Vendor shall conduct efficiency test on the connected load on UPS working at customers site by connecting two power analyzers of the same model (one is at input side of the UPS and other one is at output side) in the presence of Institute representative. Vendor need to get the clearance from the existing customer to conduct the test and arrange two similar power analyzers (preferable Fluke make) to carry this work.
- v) All the factory test data reports shall be submitted for scrutiny well in advance to obtain the dispatch clearance.
- vi) IIT Tirupati at its desecration may depute Engineers for witnessing the tests at factory.
- vii) Commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site to be carried out by the supplier with load bank for 100 hours at site (load bank should be arranged by the supplier at site with necessary interconnections). Final acceptance of the UPS and Battery bank shall be strictly on the basis of successful load test.
- viii) After successful commissioning, IITT will conduct efficiency test on load as per tender specifications, if the efficiency of the system is not found as per the designed technical specification. The material will be rejected, and vendor need to take back the material on their own cost.

19. MAINTENANCE:

- i) During warranty period, the responsibility of maintaining the system lies totally with the supplier. The bidder shall submit a checklist and schedule on the activities to be carried out for regular maintenance of the system during warranty period.
- ii) The bidder shall provide evidence and undertake that round the clock on – call service to attend to system failure within a period of 24 hours from the time of complaint.
- iii) Preventive maintenance, once in three months, will have to be carried out by the supplier during warranty period. Fault reported during warranty period must be attended within 24 hours and closed at the earliest.

20. Point by point Check list/technical specification format:

Check List as enclosed should be submitted along with techno commercial offer, failing which offer will be rejected. All items in the check list should be answered.

Any deviation from technical specification should be **clearly brought** out in technical deviation statement / Check list, the bidder must quote separately any optional items and attachments which are not covered in the tender specifications, but considered essential by them for their system.

Guaranteed technical particulars for UPS, Batteries & Galvanic Isolation Cast resin Transformer (to be filled in by the vendor with documentary evidence):

Sl. No.	DESCRIPTION	DESIRED	Compliance YES/NO	Page No. in the Technical bid
1.	MAKE & Model	To be specified by the vendor		
2.	System efficiency including galvanic Cast Resin Dry Type isolation transformer.	≥ 95% at 50% to 100% load. > 94% even at 25% load		
3.	Rated output Power in KVA	250 KVA		
4.	Rated output Power in KW	250 KW		
4a.	Rated output Power factor	Unity		
5.	Input Voltage	400 ± 10% (320V-480V)		
6.	Input Frequency	45 to 55 Hz		
7.	Rectifier Type	IGBT Based with PWM controlled		
8.	Inverter Type	IGBT Based with PWM Controlled		
9.	Input Power Factor	>0.99		
10.	Static Bypass	Inbuilt		
11.	Manual Bypass	Inbuilt		
12.	Power Walk-in	0-120 Sec(settable)		
13.	Output Voltage (Three phase 4-wire)	380/400/415 V (Selectable in steps)		
14.	Output Voltage Stability (Linear Load)	± 1%		
15.	Output Voltage Stability(Dynamic Load)	± 5%		
16.	Wave form	Sinusoidal		
17.	Output Frequency	50 Hz		
18.	Output Frequency Stability	± 0.05Hz		
19.	Frequency Slew Rate	1 Hz/sec		
20.	Voltage Recovery time	Shall be better than ± 1% within 20 milli sec.		
21.	Total Harmonic Content			

	Input Current Harmonic Distortion (%) <ul style="list-style-type: none"> • Full Load • 75% • 25-50% 	<3% <4% <8%		
21a.	Output Voltage Distortion (%) with linear Load	<2%		
21b.	Output Voltage Distortion (%) with nonlinear Load	<3%		
22.	Overload capability at unity PF			
	110% for	60 min.		
	125% for	10 min.		
	150% for	1 min.		
23.	Short circuit Current			
	Phase to Phase	180% for 1 Sec		
	Phase to neutral	300% for 1 Sec		
24.	Overall efficiency with Galvanic Isolation Cast resin transformer (built-in/external)			
	100% Load	Specify		
	75% Load	Specify		
	50% Load	Specify		
	25% Load	Specify		
25.	Operating temperature & Humidity	Temp: 0-40° C & RH: 0-95% non-condensing		
26.	Heat Dissipation with Galvanic Isolation transformer (built-in/external)			
	100% Load	Specify		
	75% Load	Specify		
	50% Load	Specify		
	30% Load	Specify		
27.	Isolation	Built-in / external Galvanic Isolation at inverter output shall be available with clear isolation of Input Neutral from Output Neutral		
27a.	In the event of external Isolation transformer/ transformer connected after static switch of the			

	UPS need to confirm the following.			
	Copper wound	Required		
	Availability input MCCB at Isolation transformer	Specify Rating of MCCB		
	Availability of output MCCB at Isolation transformer.	Specify Rating of MCCB		
	Availability of Auto soft start facility in Isolation transformer	Required		
	Availability of manual bypass at Isolation transformer	Required		
	Efficiency of Isolation transformer.	Specify at different load 25%, 50%, 75% and 100%		
	Heat loss parameters @ different load conditions.	Specify at different load 25%, 50%, 75% and 100%		
	Need to connect output of UPS with isolation transformer through suitable rated copper flexible cables.	Specify the rating of the cable and make		
	Dimensions of the Isolation transformer (depth and height of the isolation transformer cabinet should be identical to UPS dimension)	Specify		
	Type of cooling	Specify		
28.	Static Bypass	Inbuilt		
29.	Manual Bypass	Inbuilt		
30.	Event Recording Facility	Inbuilt		
31.	Battery Type	SMF Type		
32.	Designed Life of Battery	10 years		
33.	Battery Backup	20 min.		
34.	Battery Ah calculation sheet	Should attach with offer		
35.	Automatic Phase Reversal correction and protection, in the event of phase reversal UPS should not go to battery mode and should not discharge batteries	Inbuilt/External		
36.	UPS Dimension	Specify		
37.	Event Recording Facility:	Shall have Inbuilt event recording facility up to a		

		minimum of 100 events which can be accessed from front panel.		
38.	Ethernet connectivity (SNMP)	UPS Systems shall be provided with built in Ethernet connectivity to access through remote computer over intranet / internet.		
39.	Paralleling & Paralleling modules	Each supplied UPS shall be fitted with paralleling module (card) to ensure the paralleling of UPS systems.		
40.	Input Phase Reversal Correction	Shall be Inbuilt. Externally connected units are not acceptable.		
41.	Software & Hardware for remote monitoring & control	Software if any with license for interfacing to a remote PC. Any other hardware modules required to be added to the UPS shall be supplied by vendor as a part of proposed UPS. However, PC will be provided by IITT.		
	SCALABILITY			
42.	Capacity build up	Shall be scalable to connect up to 4-systems (Total up to 1000 KVA/KW) as one set without interrupting the running systems		
43.	Battery Bank Dimension	Specify		
44.	Input Contactor	Inbuilt		
45.	Output Contactor	Inbuilt		
46.	Input Isolator	Inbuilt		
47.	Output Isolator	Inbuilt		
48.	Static Bypass Isolator	Inbuilt		
49.	Manual Bypass Isolator	Inbuilt		
50.	Possible to work with common battery bank	Required		
51.	Battery Stands	Custom made Powder coated MS Stands suitable for site		

		conditions and as suggested by Institute shall be supplied. Dimensions of the stands will be provided by IITT after release of PO based on battery room dimensions		
52.	Dimensional equipment layout of the proposed system including the UPS and Battery bank giving all the clearances etc.	Specify		
53.	Heat Dissipation			
	To remove heat from the UPS units the supplier should clearly mention about their cooling arrangement and give details of any specific requirements of cooling system etc. Also details of heat generated by UPS unit.	Specify		
54.	Protections			
	Over Load	Should available		
	Short Circuit	Should available		
	Input Low Voltage	Should available		
	Input High Voltage	Should available		
	Output Over Voltage	Should available		
	Output Low Voltage	Should available		
	Battery Over Charging	Should available		
	Battery over discharging	Should available		
55.	Control & Indications			
	Alarm			
	Mains Failure	Should available		
	UPS Fault	Should available		
	Battery Discharged	Should available		
	Inverter OFF/Failed	Should available		
	Rectifier OFF/Failed	Should available		
	Over Temperature	Should available		
	Overload	Should available		
	Emergency Stop	Should available		
56.	INDICATION/DISPLAY			
	Input Voltage	Should available		
	Input Current per Phase	Should available		

	Input Frequency	Should available		
	Bypass input Voltage	Should available		
	Bypass Input Frequency	Should available		
	Inverter Output Voltage	Should available		
	Inverter output Current per phase	Should available		
	Inverter output in KVA and KW	Should available		
	Battery Voltage	Should available		
	Battery Charging Voltage	Should available		
	Battery Discharging Voltage	Should available		
	Battery backup remaining time	Should available		
	Overall System temperature	Should available		
	Inverter temperature	Should available		
	Rectifier Temperature	Should available		
57.	IP Rating	IP20 or better		

General Specifications of 250KVA (2 x 250KVA) Parallel redundant UPS System

The requirement is for Supply, Installation, Testing and Commissioning of 2 x 250 KVA Double Conversion Uninterruptible Power Supply (UPS) system working ON-LINE in redundant parallel mode with standalone FR Grade SMF Battery Banks. The UPS shall be of Microprocessor Controlled along with monitoring facility for diagnostics and trouble-free operation. The general specifications are as under.

Sl. No	Description	Compliance YES/NO
1.	Supply, Installation, Testing and Commissioning of 4 sets of 2 x 250 KVA (250KVA/250KW), Double Conversion (ON-LINE), Un-interruptible Power Supply (UPS) system working in redundant parallel mode with 4 sets of FR grade Sealed Maintenance Free Battery (SMF) Banks one set each for each UPS.	
2.	UPS shall be of Double Conversion type of system.	
3.	Each 250 KVA UPS system shall have built-in/external galvanic Cast Resin Dry Type isolation transformer at output side of the inverter.	
4.	The acoustic noise shall be less than 75dbA at one-meter distance.	
5.	All system control parameters and monitoring of rectifier, battery charging and inverter functions shall be carried out digitally by microprocessor.	
6.	Microprocessor shall be used for monitoring and controlling of all system parameters.	
7.	The system shall use High frequency IGBT inverter & IGBT rectifier with PWM technology.	
8.	The system shall have inbuilt Static Bypass as well as Manual Bypass.	
9.	The proposed Battery being supplied shall have designed life of 10 years as per manufacturer's brochure/literature. Vendor/OEM has to upload the relevant support brochure/Literature/declaration of manufacturer.	
10.	All the battery terminals shall be shrouded for safety.	
11.	Whether Tenderer/OEM will extend the Comprehensive AMC after Warranty period.	
12.	The proposed batteries shall support 20 minutes back up with each 2x 250 KVA UPS @250 KW load (common battery configuration) (i.e. the common battery bank for 20 min. backup on 250 KVA	
13.	Battery Ah Calculation Sheet to support 250KVA/250KW for 20 min shall be attached along with qualification bid. Load power factor of 1, End Cell Voltage (ECV) at 1.7V, temperature correction factor @ 27-degree C, design margin 10% and ageing factor 25% shall be considered while calculating the battery backup time.	
14.	Programmable battery testing facility shall be provided to know the battery status. By using battery test mode, the system shall disconnect input power supply at set time period	

	and battery shall discharge through the load. This feature shall be user selectable through the front panel of the system.	
15.	The system shall have battery monitoring facility. This system shall check battery capacity in regular intervals during normal operation of the UPS. The front panel LCD panel shall display the battery autonomy.	
16.	Front panel of the system shall have LCD display for display of input voltage, input frequency, input voltage and frequency of the supply connected in by-pass line, output voltage, output frequency and load connected to the system. It shall also display events occurred by using event recorder. It shall also provide facility to switch UPS ON/OFF, emergency OFF and manual by-pass ON/OFF.	
17.	Mimic diagram shall be provided to know the status of the rectifier, inverter, battery and output bus bar.	
18.	Remote monitoring and Control to be provided over built in Ethernet connectivity (SNMP)	
19.	If necessary, it shall be possible to operate each set of 2 x 250 KVA UPS in parallel redundant mode with single battery bank with reduced back-up time.	
20.	Charger (Rectifier) shall be compatible and suitable for various brands and types of batteries.	
21.	Power correction capacitors, if any, shall be in-built only. Externally connected separate units are not acceptable.	
22.	System shall have automatic phase reversal correction facility. (It means in the event of any phase reversal happening at input side of the UPS, the system shall not go to battery mode or trip the UPS but continue to work in normal mode indicating the phase reversal alarm. However, Transfer to Bypass may be inhibited.)	
23.	The successful bidder should submit the Type test report from the Labs accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories) for the offered UPS model. The type test report can be submitted of any rating between 200 KVA and 300 KVA with the Galvanic Isolation output transformer (built-in) of the model offered before calling for Factory inspection.	
24.	If the Isolation Transformer offered externally/after static bypass, Type test report for Isolation Transformer from the Labs authorised by the Govt. for the offered Isolation transformer	
25.	As a part of technical evaluation, if the Institute wish to visit any of the vendor's customer site location, vendor need to arrange the site visit where parallel redundant UPS is working for the offered model and rating 200 kVA and above.	
26.	If required, the Vendor shall conduct efficiency test on the connected load on UPS working at customers site by connecting two power analyzers of the same model (one is at input side of the UPS and other one is at output side) in the presence of Institute representatives. Vendor need to get the clearance from the existing customer to conduct the test and arrange two similar power analyzers (preferable Fluke make) to carry this work.	

27.	As a part of commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site to be carried out by the supplier with load bank for 100 hours at site (load bank should be arranged by the supplier at site with necessary interconnections).	
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ANNEXURE – 3

SCOPE OF SUPPLY, WORK AND BILL OF MATERIAL

The scope shall include the complete design, engineering, supply, installation, commissioning & testing of 250KVA (2X250KVA) parallel redundant Uninterruptable Power Supply (UPS) systems as follows:

Sl. No.	DESCRIPTION	Qty.	Compliance YES/NO
	Supply, packaging and transportation, loading at factory and unloading at site, Insurance charges, moving the equipment to installation site, Installation, Testing and Commissioning including arranging for hiring of crane, labour, masonry and civil works etc., as required at site (IIT Tirupati, Merlapaka village, Yerpedu mandal, Chittoor district, Andhra Pradesh).		
1.	2x250KVA (2 modules of capacity 250 KVA each connected in parallel) UPS with built-in/external Galvanic Cast Resin Dry Type Isolation transformer, built-in Input Phase reversal correction and protection facility in each module with a 20 min. battery back-up for each Set. (1 Set means 2x250KVA UPS)	4 Sets	
2.	Sealed Maintenance Free VR Lead Acid Battery bank along with battery racks, battery interconnection links, DC Cable of 10-meter distance, battery breaker with individual battery bank including battery stand (2 Banks connected in parallel for a total of 20 minutes back-up time). Makes: Amara Raja / Exide or equivalent subject to the prior approval from the Institute after placing order.	4 Sets	
3.	Built-in Temperature compensation Battery Charging Facility	With each module	
4.	Built in Ethernet connectivity (SNMP) modules for local LAN for monitoring and control through Internet.	Lot	
	Neoprene/Glass wool insulated battery grade copper Cable(s) between UPS and Battery Bank(s) to be laid in flexible corrugated wire re-inforced PVC flexible pipes. Cross-section area of the cable to be		

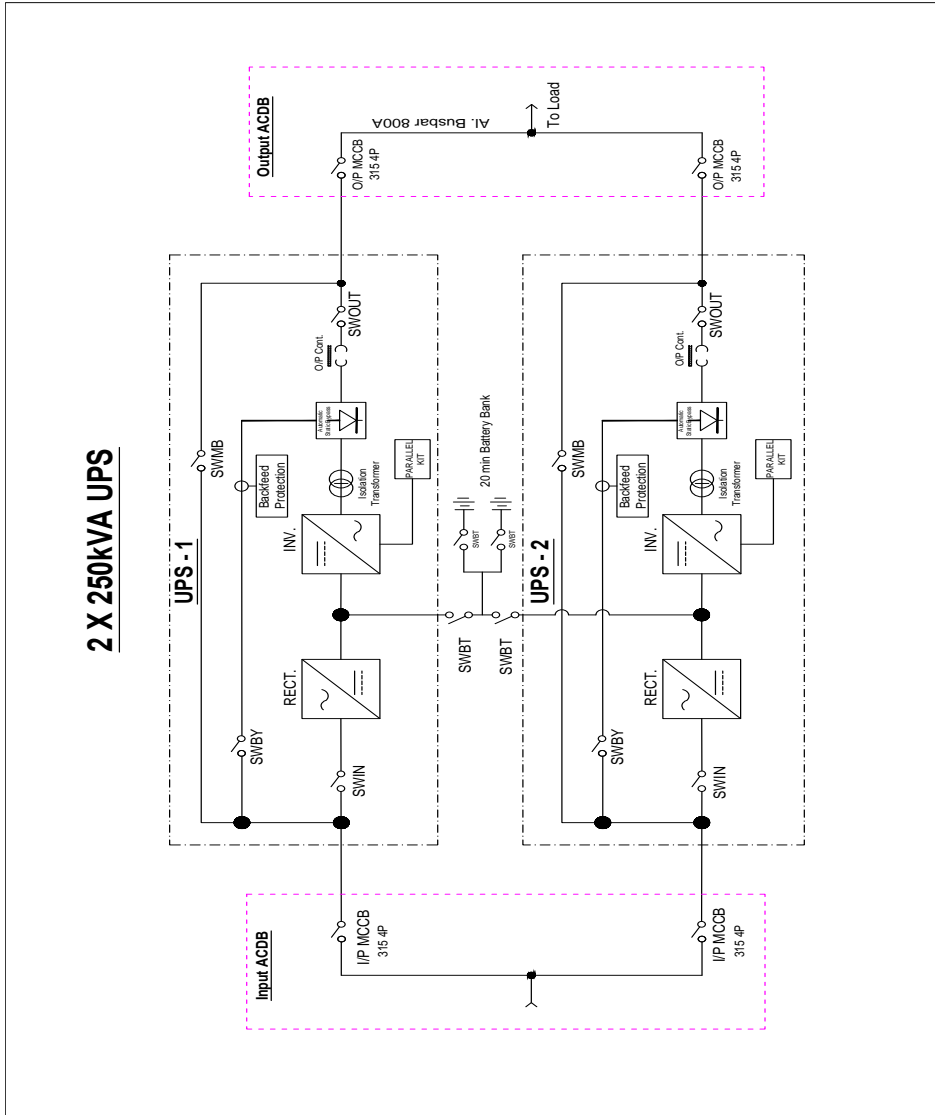
	designed as per the full DC current capacity rating. (Approximately Battery banks will be located 10 mtrs away from UPS Systems)		
5.	4 runs of single core, 150sqmm, Multi-strand FR PVC (or better) insulated copper conductor cables laid in flexible corrugated wire reinforced PVC flexible pipes with suitable crimping terminal ends and glands for UPS INPUT connections from Input Panel to UPS system. Makes: Finolex / or equivalent.	240 mtrs.	
	5 runs of single core, 120sqmm, Multi strand FR PVC (or better) insulated copper conductor cables laid in flexible corrugated wire reinforced PVC flexible pipes with suitable crimping terminal ends and glands for UPS OUTPUT connections from UPS system to the output panel. (Three runs for three phases and two runs for neutral)	320 mtrs.	
	Providing grounding as per standard procedure by connecting at 2-points for each equipment/Battery stand using electrolytic grade annealed bare copper earth strips from nearest available earthing busbar including laying and terminating the earth strip. Insulators shall be used for laying the earth strips wherever necessary. Insulators shall be mounted in the cable trench on sidewall/floor as instructed by Institute Engineer for laying the earth strips. Earth strip size: 25X3mm	80 Kgs.	
	Connecting Neutral point of the UPS System using 2-separate, FR PVC (or better) insulated copper cables of size 120sq.mm to the dedicated neutral Earth grid available inside/outside the UPS room.	40 mtrs.	
	Documentation (3 copies each) & Software	Lot	
	Instruction Manuals for Operations & Maintenance		
	Service Manuals		
	Factory test reports		
	Any other relevant documents as essential		
	Software if any with license for interfacing to a remote PC. PC will be arranged by IITT		
	Inspection & Testing:		
	<ul style="list-style-type: none"> i) IITT at its discretion may depute engineers for witnessing the test at factory which will be without any extra cost from that quoted. ii) All the factory test data reports shall be submitted for scrutiny well in advance to obtain the dispatch clearance. iii) Commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site have to be carried out by the vendor. <p>Pl. note that the Load bank should be arranged by the supplier</p>		

Terms and Conditions

Sl. No.	DESCRIPTION	Compliance YES/NO
1.	Bidder shall note that the specifications and terms mentioned in Annexure-1, Annexure-2, Annexure-3 and Annexure-4 are final and required to be compliance by the vendor for considering the commercial bid. Bids consisting of total solution only will be considered. Bids consisting of Partial solution will not be considered.	
2.	Bidder shall obtain valid authorization certificate specific to the indent from OEM and upload the same along with technical/qualifying bid. However, in the instance of OEM directly participating in the tender, they need not produce the same but they have to up load the self-declaration.	
3.	Bidder shall obtain a declaration from OEM that the Spares and Service for the proposed model is available for at least 10yrs from the date of installation and upload the same along with Technical/qualifying bid. However, in the instance of OEM directly participating in the tender, they themselves can declare the same and upload along with Technical/qualifying bid.	
4.	Bidder must have to declare his turnover in the preceding three financial years consecutively for UPS products only.	
5.	Both OEM & Bidder's P&L Statement of the company should be positive in last 3 years and never black listed / debarred by any Govt. or public sector undertaking etc. OEM & Bidder need to submit P&L Statement for last 3 financial years.	
6.	Bidder must submit reference reports from existing customers (Government/public sector undertaking/reputed educational institutions/reputed software companies only accepted) who have holding same model of UPS systems and working in the last 24 months, to be produced along with list of clientele. This is should be in parallel redundant configuration of same model. Rating of the UPS should be 2x200KVA and above.	
7.	Bidder should not have been black listed by banking sector, insurance sector or any other Central or State Govt. agency. An undertaking to this effect if required.	
8.	Bidder should have relevant registrations and should not have been declared defaulter by any such department of Govt. of India including Income Tax, GST etc.	
9.	Bidder must have either own or through service provider full-fledged service support facility like tools and spares, along with trained manpower. The bidder has to provide infrastructure support in the form of Direct Service Centre or Authorized Service Centre within the states of Andhra Pradesh, Tamil Nadu, Telangana, Karnataka.	
10.	The service provider shall respond to service calls within 24 hours during the warranty period. Vendor/OEM shall attach the address and telephone numbers of their local/nearest service center(s) along with Technical/qualifying bid	

11.	Bidder shall supply all relevant documents, with original software CDs/hard disk.		
12.	Bidder/OEM shall arrange for training of the UPS system operations at installation site(s).		
13.	All the specifications of the UPS will be tested at factory before accepting the systems. If any special setup is required for testing of the system(s), it is the Vendor's responsibility to arrange the same.		
14.	Batteries can be delivered directly at site from battery OEM. However, Bidder has to provide the OEMs certification of Batteries. Batteries will be tested at site during installation & Commissioning.		
15.	Delivery Schedules		
	2 Sets	i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) within 2 months from the date of release of PO.	
		ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.	
		iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.	
		iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.	
	2 Sets	i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of P.O.	
		ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.	
		iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.	
		iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.	
16.	Bidder / OEM shall attach the technical brochures / Technical catalogues in support of the Make and Model of UPS and batteries and other equipment offered by them in support of their claim of compliance. Website details and email address of the OEM shall be provided for online verification of the same.		
17.	The Bidder shall depute sufficient staff to ensure completion of work well within the specified time. The Bidder has to take permission from IITT for the staff working at site.		

18.	The Bidder shall be responsible for any loss and damage caused to any equipment or system due to negligent handling by his workmen and the cost of the damage/loss will be recovered from the bills payable to him.	
19.	Bidder is responsible for unloading of equipment including hiring of crane, labour as necessary and moving equipment to the installation site.	
20.	Bidder shall arrange all the Tools and Tackles required for completing the work.	
21.	The bidder shall make his own arrangements for the transport and food for his workmen.	
22.	The bidder shall take necessary measures to comply safety rules. IITT shall not be held responsible for the negligence on part of the work men safety.	
23.	Staggered supply of items is expected. However, warranty will start from the date of installation and commissioning of items at site.	
24.	Warranty: System supplied shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores or 60 months from the date of commissioning of the unit at site. Whereas battery bank for a minimum warranty period of 26 months from the date of receipt of the material at our Stores or 24 months from the date of commissioning of the unit at site.	
25.	Items shall be delivered, installed and commissioned at our Institute located at Merlapaka village, Yerpedu mandal, Chittoor district, Andhra Pradesh.	



NOTE: Input ACDB and Output ACDB will be provided by IIT Tirupati at free of cost. Necessary interconnections between the system and ACDBs are in the scope of the bidder/vendor.

ITEM: 2

SPECIFICATIONS OF 2x120 KVA PARALLEL REDUNDANT ON-LINE UNINTERRUPTABLE POWER SUPPLY SYSTEM

Supply, Installation, Testing and Commissioning of 2 sets of 2x120 KVA Parallel Redundant On-Line Uninterruptable Power Supply System (UPS) with Microprocess Controlled along with Sealed Maintenance Free Batteries for providing 20 Minutes Back-Up, complete as per the Technical Specifications and Features furnished below.

1. SCOPE:

The scope of the work for True on-line, double conversion, fully Microprocessor based parallel redundant UPS System includes configuration finalization in accordance with this specification, shall include design, manufacture, fabrication, assembly, pre-shipment testing at supplier's works, proper packing for transportation delivery at site, unloading, storage, erection, interconnection of related equipments, calibration, testing, commissioning and putting the UPS System together with all accessories and auxiliaries as specified hereinafter in a fully operational condition acceptable to the Institute.

The bidder shall be responsible for engineering and providing all materials, equipment's and services specified or otherwise, which are required to fulfill the intent of ensuring operability, maintainability, completeness and reliability of the total work covered under this specification within the quoted price.

2. STANDARDS:

The design, manufacture, inspection, testing and installation of the UPS System covered under this specification shall conform to the latest editions of codes and standards as applicable. This specification covers the general design and requirement of On-Line Uninterruptable Power Supply System for efficient and trouble-free operation. The equipment covered by this specification shall unless otherwise stated, be designed, constructed and tested in accordance with the latest revisions of relevant standards.

3. OPERATION PRINCIPLE:

The main elements of UPS shall consists of IGBT Rectifier with PWM controller, IGBT Inverter with PWM controller, static bypass switch, service bypass with suitable rated SMF batteries for energy storage.

The rectifier output shall be converted by the inverter into 3Phase AC which shall supply the connected load with constant voltage and frequency through galvanic isolation transformer connect at output side of the inverter.

In the event of mains failure, the battery shall feed power to the loads through the inverter. The rectifier shall be designed such as to supply the inverter as well as charge the battery.

Service/maintenance by pass shall permit easy maintenance to be carried out.

4. DESCRIPTION:

The UPS shall be True ON Line, Double conversion type, capable of working in standalone, hot standby and parallel redundant configuration.

The control circuits shall be digital signal processor based and shall be controlled by internal software.

The UPS shall be able to accept an input voltage range of $400 \pm 20\%$ (320V-480V) at full load and up to with a frequency range of 45-55 Hz.

The constant output voltage and frequency of UPS shall be as specified in Guaranteed Technical Particulars (GTP) and Single Line Diagram (SLD). The UPS should work with Static Bypass disable/enable modes. In the event of static bypass disability output frequency of the UPS should be 50Hz.

The Rectifier/charger shall be fully Digital Signal Processor based, temperature compensated type. Input Current harmonics shall be restricted to $<3\%$ and power factor should be maintained at >0.99 . The rectifier shall be provided with fuse protection.

The Ripple voltage shall be restricted to less than $\pm 1\%$.

The rating of the rectifier shall be such that it shall not take more than 8 hrs to charge batteries after full discharge.

The inverter shall be fully Digital Signal processor-based vector control technique with IGBTs.

The efficiency of the UPS along with (built-in/external) galvanic isolation transformer output shall be above 95% at 50% to 100% load condition and better than 94% even at 25% load.

In case of external Galvanic Isolation transformer, bidder need to supply, Indoor type, for connecting output side of IGBT based UPS systems. Since two UPS modules are connected in parallel, the transformers are also having identical design and position such a way along with UPS, looks like a single cabinet. Connection of UPS and Transformer should be on vendor's scope. The external Isolation transformer/Isolation transformer connected after static bypass of the UPS should have inbuilt Auto Soft start facility, copper wound, maintenance bypass, input and output MCCBs. The isolation transformer and MCCBs and connection cable should capable to withstand overload capacity as mentioned for UPS specification. The UPS and external isolation transformer need to connect through proper rating flexible copper cable. The bidder should attach the SLD along with their bid.

In case of input supply phase reversal, the system should not trip and should not go to battery. It should work on mains with alarm indication. It should be in-built feature of the system

The UPS shall be provided with static bypass switch and transfer to bypass and re-transfer shall be automatic. Bypass transfer inhibit switch to be provided to disable bypass for each unit.

The total voltage harmonic distortion at 100% non-linear load shall be less than 3% and the THD for 100% linear load shall be less than 2%.

The phase displacement for shall be 120 ± 1 deg.

The UPS shall be capable of withstanding an overloading of 125% for 10 minutes and 150% for 1 minute and 1000% for 20 ms (through static by pass)

Built-in/external Galvanic Isolation between each 120 kVA UPS output and load to be provided.

The UPS shall be provided with the following protection.

Over Load

Short Circuit

Input Low Voltage

Output Over Voltage

Battery over charging

Battery over discharging.

Input Surge Protection for sustaining input surges without damage to the system as per standard.

5. CONTROL AND INDICATION:

The UPS shall be provided with a control panel for alarm and annunciation of the UPS faults. Also, it should be able to store minimum 100 history events. The following alarm and annunciation shall be provided.

Alarm

- i. Mains Failure
- ii. UPS Fault
- iii. Battery Discharged
- iv. Inverter off/Failed
- v. Rectifier Off/Failed
- vi. Over Temperature
- vii. Over Load
- viii. Emergency Stop

Annunciation/ Indication

- i. Input Voltage
- ii. Input current per phase
- iii. Bypass input voltage
- iv. Bypass input frequency
- v. Inverter output voltage
- vi. Inverter output current per phase
- vii. Input, output and bypass frequency
- viii. Percentage of load at the inverter output
- ix. Inverter output power factor
- x. Inverter output in KVA and KW
- xi. DC Voltage
- xii. Battery Current.

UPS system shall be provided with serial RS232, SMS to mobile phone (Alerts) and BMS connectivity.

6. DEGREE OF PROTECTION:

The degree of protection for the enclosure shall be IP20 or more.

7. COOLING METHOD:

Cooling method shall be by forced air with integral fans.

8. CREST FACTOR:

For meeting sensitive electronic loads drawing non-linear currents, UPS shall be with a crest factor of 3:1

9. BATTERIES:

All the batteries shall be supplied, installed, tested and commissioned at site as required and as directed by the site Engineers. The batteries shall be of Sealed Maintenance Free batteries and shall provide a backup for 20 min. While calculating battery sizing, consider the following factors.

End of cell voltage 1.7 V, System rating (120 kW), Design margin 10%, Aging factor 25%, Inverter efficiency 95%, Temperature correction factor @27 degree C. Bidder should provide battery Ah calculation sheet along with wattage supporting documents. **Minimum VAH required is 1,44,000.**

Common Battery Bank Configuration: Both (2Nos) Battery banks shall be connected in parallel. Each Battery Bank should be sized for a backup time of minimum 10 minutes on a 120kVA/120kW load. When the Battery banks are working in parallel, sizing should be done to achieve a backup time of minimum 20 minutes on 120kVA/120kW load. SLD to be referred for the battery connections with UPS.

In UPS parallel redundant mode, when one of the UPS fails, both the battery back should work parallel and cater to the entire 120kVA/120kW load with a backup time of minimum 20 minutes on 250kVA/250kW through the second UPS.

BATTERY STAND:

Suitably designed with appropriate material & size battery stand shall be supplied and installed at site. All batteries shall be positioned on the above stand, interconnected and commissioned.

10. BATTERY DISCONNECT BREAKER

Each UPS module shall have a properly rated circuit breaker to isolate it from the battery. This breaker is to be in a separate enclosure and fixed on the battery stand itself. When open, there shall be no battery voltage in the UPS enclosure. Each UPS module shall

automatically be disconnected from the battery by opening its breaker when the battery reaches the minimum discharge voltage level or when signalled by other control functions.

11. DRAWINGS & DOCUMENTS:

The following drawings and documents shall be furnished.

- a. General arrangement drawing showing
 - i. Overall dimensions
 - ii. Total Weight
 - iii. Section View
 - iv. Bill of material
- b. Manufacturing schedule & Test schedule
- c. SLD for Main AC circuits, Main blocks and connections
- d. Schematics for Battery fuses/switches and number of battery units
- e. Protocol of functional tests and measurements.

12. TECHNICAL DATA:

INPUT:

- | | |
|--|-------------------------------------|
| i) Three Phase Voltage | : 400 V \pm 20% |
| ii) Supply Frequency | : 45 to 55 Hz. |
| iii) Input Power Factor | : >0.99 from 25% to 100% load |
| iv) Input current distortion/Harmonics | : <3% at 100% load, <5% at 50% load |
| v) Rectifier Technology | : IGBT with PWM technology. |

BY-PASS LINE:

- | | |
|------------------------------------|--------------------|
| i) Three Phase Voltage | : 400 V \pm 20%. |
| ii) Over load capacity for 1 min | : 150% |
| iii) Over load capacity for 10 min | : 125% |

OUTPUT:

- | | |
|-------------------------|---|
| i) Inverter Technology | : IGBT with PWM Technology |
| ii) Voltage Three Phase | : 415 V and should be selectable to 380 or 400 Volts. |
| iii) Voltage Stability | : + 1% Static, + 3% dynamic |
| iv) Wave Form | : Sinusoidal with 2% total harmonic distortion |
| v) Frequency | : 50 Hz + 0.05Hz. |
| vi) Crest factor | : 3:1 |
| vii) Accepted over load | : 110% for 60 min., 125% for 10 min., 150% |

	for 1 min. (at 120 KVA/120 KW)
viii) Power in KVA	: 120 KVA
ix) Power in KW	: 120 KW

13. SYSTEM:

Total Efficiency of the UPS (AC-AC) including inverter output Galvanic Isolation transformer (inbuilt/external): more than 95% at 50% to 100% of load and more than 94% even at 25% load. Standard RS 232 interface facility should be provided, SMS to mobile phone (Alerts) and BMS connectivity. Battery AH calculation should be enclosed along with the bid.

14. GENERAL CONDITIONS FOR TENDERERS:

The tenderers shall quote only for high reliability UPS System with all technical details.

The requirement is for 'Parallel Redundant UPS System' 3 phase 4 wire 400V/ 50Hz. The specifications given in pre-pages are only for guidance of the bidders. The bidders shall quote for their systems offered with details of various protections, annunciations, controls, scheme etc., with relevant details for each part separately.

Detailed schematic drawings for all the components (not block diagrams) shall be sent along with the offer with technical write up.

Institute will provide **incoming and outgoing power panel near** to the system and also necessary **earthing** for both neutral and body. The rest of the work including necessary inter connecting wires / cables etc., is under the scope of the Bidder as mentioned above. Distance between incoming panel to UPS would be 10 meters and distance between UPS to output panel is 10 meters. Bidder need to use Finolex / or equivalent Single core multi-strand copper cable with copper lugs properly crimped and terminated at UPS and Panels side (need to provide cables for 3 Phases and Neutral).

All the components of the system shall be suitable to withstand the worst humid conditions.

The system offered shall have high MTBF and reliability and very low MTTR. Make and performance characteristics of the sealed maintenance free Lead acid battery selected along with the selection calculation details shall be furnished. Power loss of the system under no load as well as full load conditions shall be indicated.

Spare potential free contacts for all monitoring shall be brought out for remote monitoring of the parameters away from the location of the system.

The bidder should submit an indicative schematic diagram and layout with dimensions with all major components offered by them.

15. WARRANTY:

System supplied (excluding Battery bank) shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores **or** 60 months from the date of commissioning of the unit at site for trouble free and satisfactory performance.

Whereas Battery bank shall be covered for a minimum warranty period of 26 months from the date of receipt of the material at our Stores **or** 24 months from the date of commissioning of the unit at site for trouble free and satisfactory performance.

The successful tenderer should deposit the performance security valid for **63 Months** in the form of DD / TDR / FDR / Bank Guarantee @ **03% (three percent) of the total order value** at the earliest from the date of commissioning of the items. No interest will be paid by IIT Tirupati on the deposit.

16. INSTALLATION, COMMISSIONING & DOCUMENTATION:

UPS systems, Battery banks and associated auxiliary systems shall be installed as per manufacturers guidance and as per standard practice and as per the requirements of IIT Tirupati at site.

After satisfactory installation and pre-commissioning tests, the UPS may be commissioned. The following documents each 3 copies are to be provided for the UPS system, Battery and other accessories.

- i) Operation & Maintenance instruction manual.
- ii) Service manual with detailed power and control wiring diagram,
- iii) Routine and type and commissioning test reports.
- iv) Software with Licence for interfacing to remote PC
- v) Other relevant documents.

17. TRAINING:

The bidder shall arrange free of cost training to our Dept staff at site.

18. INSPECTION & TESTING:

- i) Type test certificates for UPS system (preferably along with the tender) from the Labs accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories) for the offered UPS model. The type test report can be submitted of any

rating between 100 KVA and 200 KVA with the output transformer (built-in / external) of the model offered.

NOTE: The successful bidder should submit the Type test report for the rating between 100 KVA and 200 KVA with the Galvanic Isolation output transformer (built-in) of the model offered before calling for Factory inspection. If the Isolation Transformer offered externally/after static bypass then Type test report for Isolation Transformer (should be submitted along with the tender) from the Labs authorised by the Govt. for the offered Isolation transformer

- ii) Necessary routine tests shall be conducted in presence of IIT Tirupati representatives. All routine tests as per standards shall be conducted for proper functioning of the equipment.
- iii) If the Institute wish to visit any of the vendor's customer site location, vendor need to arrange the site visit where parallel redundant UPS is working for the offered model and rating should be 100 kVA and above.
- iv) As a part of technical evaluation, the Vendor shall able to conduct efficiency test on the connected load on UPS working at customers site by connecting two power analyzers of the same model (one is at input side of the UPS and other one is at output side) in the presence of Institute representative. Vendor need to get the clearance from the existing customer to conduct the test and arrange two similar power analyzers (preferable Fluke make) to carry this work.
- v) All the factory test data reports shall be submitted for scrutiny well in advance to obtain the dispatch clearance.
- vi) IIT Tirupati at its desecration may depute Engineers for witnessing the tests at factory.
- vii) Commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site to be carried out by the supplier with load bank for 100 hours at site (load bank should be arranged by the supplier at site with necessary interconnections). Final acceptance of the UPS and Battery bank shall be strictly on the basis of successful load test.
- viii) After successful commissioning, IITT will conduct efficiency test on load as per tender specifications, if the efficiency of the system is not found as per the designed technical specification. The material will be rejected and vendor need to take back the material on their own cost.

19. MAINTENANCE:

- ii) During warranty period, the responsibility of maintaining the system lies totally with the supplier. The bidder shall submit a checklist and schedule on the activities to be carried out for regular maintenance of the system during warranty period.
- ii) The bidder shall provide evidence and undertake that round the clock on – call service to attend to system failure within a period of 24 hours from the time of complaint.
- iii) Preventive maintenance, once in three months, will have to be carried out by the supplier during warranty period. Fault reported during warranty period must be attended within 24 hours and closed at the earliest.

20. Point by point Check list/technical specification format:

Check List as enclosed should be submitted along with techno commercial offer, failing which offer will be rejected. All items in the check list should be answered.

Any deviation from technical specification should be **clearly brought** out in technical deviation statement / Check list, the bidder must quote separately any optional items and attachments which are not covered in the tender specifications, but considered essential by them for their system.

Guaranteed technical particulars for UPS, Batteries & Galvanic Isolation Transformer (to be filled in by the vendor with documentary evidence):

Sl. No.	DESCRIPTION	DESIRED	Compliance YES/NO	Page No. in the Technical bid
1.	MAKE & Model	To be specified by the vendor		
2.	System efficiency including galvanic Cast Resin Dry Type isolation transformer (built-in/external).	≥ 95% at 50% to 100% load. > 94% even at 25% load		
3.	Rated output Power in KVA	120 KVA		
4.	Rated output Power in KW	120 KW		
4a.	Rated output Power factor	Unity		
5.	Input Voltage	400 ± 20% (320V-480V)		
6.	Input Frequency	45 to 55 Hz		
7.	Rectifier Type	IGBT Based with PWM controlled		
8.	Inverter Type	IGBT Based with PWM Controlled		
9.	Input Power Factor	>0.99		
10.	Static Bypass	Inbuilt		
11.	Manual Bypass	Inbuilt		
12.	Power Walk-in	0-120 Sec(settable)		
13.	Output Voltage (Three phase 4-wire)	380/400/415 V (Selectable in steps)		
14.	Output Voltage Stability (Linear Load)	± 1%		
15.	Output Voltage Stability(Dynamic Load)	±5%		
16.	Wave form	Sinusoidal		
17.	Output Frequency	50 Hz		
18.	Output Frequency Stability	±0.05Hz		
19.	Frequency Slew Rate	1 Hz/sec		
20.	Voltage Recovery time	Shall be better than ± 1% within 20 milli sec.		
21.	Total Harmonic Content			

	Input Current Harmonic Distortion (%) <ul style="list-style-type: none"> • Full Load • 75% • 25-50% 	<p><3%</p> <p><4%</p> <p><8%</p>		
21a.	Output Voltage Distortion (%) with linear Load	<2%		
21b.	Output Voltage Distortion (%) with nonlinear Load	<3%		
22.	Overload capability at unity PF			
	110% for	60 min.		
	125% for	10 min.		
	150% for	1 min.		
23.	Short circuit Current			
	Phase to Phase	180% for 1 Sec		
	Phase to neutral	300% for 1 Sec		
24.	Overall efficiency with Galvanic Isolation transformer (built-in/external)			
	100% Load	Specify		
	75% Load	Specify		
	50% Load	Specify		
	25% Load	Specify		
25.	Operating temperature & Humidity	Temp: 0-40° C & RH: 0-95% non-condensing		
26.	Heat Dissipation with Galvanic Isolation transformer (built-in/external)			
	100% Load	Specify		
	75% Load	Specify		
	50% Load	Specify		
	30% Load	Specify		
27.	Isolation	Built-in/external Galvanic Isolation at inverter output shall be available with clear isolation of Input Neutral from Output Neutral		
27a.	In the event of external Isolation transformer/ transformer connected after static switch of the UPS need to confirm the following.			
	Copper wound	Required		

	Availability input MCCB at Isolation transformer	Specify Rating of MCCB		
	Availability of output MCCB at Isolation transformer.	Specify Rating of MCCB		
	Availability of Auto soft start facility in Isolation transformer	Required		
	Availability of manual bypass at Isolation transformer	Required		
	Efficiency of Isolation transformer.	Specify at different load 25%, 50%, 75% and 100%		
	Heat loss parameters @ different load conditions.	Specify at different load 25%, 50%, 75% and 100%		
	Need to connect output of UPS with isolation transformer through suitable rated copper flexible cables.	Specify the rating of the cable and make		
	Dimensions of the Isolation transformer (depth and height of the isolation transformer cabinet should be identical to UPS dimension)	Specify		
	Type of cooling	Specify		
28.	Static Bypass	Inbuilt		
29.	Manual Bypass	Inbuilt		
30.	Event Recording Facility	Inbuilt		
31.	Battery Type	SMF Type		
32.	Designed Life of Battery	10 years		
33.	Battery Backup	20 min.		
34.	Battery Ah calculation sheet	Should attach with offer		
35.	Automatic Phase Reversal correction and protection, in the event of phase reversal UPS should not go to battery mode and should not discharge batteries	Inbuilt/External		
36.	UPS Dimension	Specify		
37.	Event Recording Facility:	Shall have Inbuilt event recording facility up to a minimum of 100events which can be accessed from front panel.		
38.	Ethernet connectivity (SNMP)	UPS Systems shall be provided with built in Ethernet connectivity to		

		access through remote computer over intranet / internet.		
39.	Paralleling & Paralleling modules	Each supplied UPS shall be fitted with paralleling module (card) to ensure the paralleling of UPS systems.		
40.	Input Phase Reversal Correction	Shall be Inbuilt. Externally connected units are not acceptable.		
41.	Software & Hardware for remote monitoring & control	Software if any with license for interfacing to a remote PC. Any other hardware modules required to be added to the UPS shall be supplied by vendor as a part of proposed UPS. However, PC will be provided by IITT.		
	SCALABILITY			
42.	Capacity build up	Shall be scalable to connect up to 4-systems (Total up to 480 KVA/KW) as one set without interrupting the running systems		
43.	Battery Bank Dimension	Specify		
44.	Input Contactor	Inbuilt		
45.	Output Contactor	Inbuilt		
46.	Input Isolator	Inbuilt		
47.	Output Isolator	Inbuilt		
48.	Static Bypass Isolator	Inbuilt		
49.	Manual Bypass Isolator	Inbuilt		
50.	Possible to work with common battery bank	Required		
51.	Battery Stands	Custom made Powder coated MS Stands suitable for site conditions and as suggested by Institute shall be supplied. Dimensions of the stands will be provided by IITT after release of PO		

		based on battery room dimensions.		
52.	Dimensional equipment layout of the proposed system including the UPS and Battery bank giving all the clearances etc.	Specify		
53.	Heat Dissipation			
	To remove heat from the UPS units the supplier should clearly mention about their cooling arrangement and give details of any specific requirements of cooling system etc. Also details of heat generated by UPS unit.	Specify		
54.	Protections			
	Over Load	Should available		
	Short Circuit	Should available		
	Input Low Voltage	Should available		
	Input High Voltage	Should available		
	Output Over Voltage	Should available		
	Output Low Voltage	Should available		
	Battery Over Charging	Should available		
	Battery over discharging	Should available		
55.	Control & Indications			
	Alarm			
	Mains Failure	Should available		
	UPS Fault	Should available		
	Battery Discharged	Should available		
	Inverter OFF/Failed	Should available		
	Rectifier OFF/Failed	Should available		
	Over Temperature	Should available		
	Overload	Should available		
	Emergency Stop	Should available		
56.	INDICATION/DISPLAY			
	Input Voltage	Should available		
	Input Current per Phase	Should available		
	Input Frequency	Should available		
	Bypass input Voltage	Should available		
	Bypass Input Frequency	Should available		
	Inverter Output Voltage	Should available		
	Inverter output Current per phase	Should available		
	Inverter output in KVA and KW	Should available		

	Battery Voltage	Should available		
	Battery Charging Voltage	Should available		
	Battery Discharging Voltage	Should available		
	Battery backup remaining time	Should available		
	Overall System temperature	Should available		
	Inverter temperature	Should available		
	Rectifier Temperature	Should available		
57.	IP Rating	IP20 or better		

General Specifications of 120KVA (2 x 120KVA) Parallel redundant UPS System

The requirement is for Supply, Installation, Testing and Commissioning of 2 x 120 KVA Double Conversion Uninterruptible Power Supply (UPS) system working ON-LINE in redundant parallel mode with standalone FR Grade SMF Battery Banks. The UPS shall be of Microprocessor Controlled along with monitoring facility for diagnostics and trouble-free operation. The general specifications are as under.

Sl. No.	Description	Compliance YES/NO
1.	Supply, Installation, Testing and Commissioning of 2 sets of 2 x 120 KVA (120KVA/120KW), Double Conversion (ON-LINE), Un-interruptible Power Supply (UPS) system working in redundant parallel mode with 2 sets of FR grade Sealed Maintenance Free Battery (SMF) Banks one set each for each UPS.	
2.	UPS shall be of Double Conversion type of system.	
3.	Each 120 KVA UPS system shall have built-in/external galvanic isolation transformer at output side of the inverter.	
4.	The acoustic noise shall be less than 75dbA at one-meter distance.	
5.	All system control parameters and monitoring of rectifier, battery charging and inverter functions shall be carried out digitally by microprocessor.	
6.	Microprocessor shall be used for monitoring and controlling of all system parameters.	
7.	The system shall use High frequency IGBT inverter & IGBT rectifier with PWM technology.	
8.	The system shall have inbuilt Static Bypass as well as Manual Bypass.	
9.	The proposed Battery being supplied shall have designed life of 10 years as per manufacturer's brochure/literature. Vendor/OEM has to upload the relevant support brochure/Literature/declaration of manufacturer.	
10.	All the battery terminals shall be shrouded for safety.	
11.	Whether Tenderer/OEM will extend the Comprehensive AMC after Warranty period.	
12.	The proposed batteries shall support 20 minutes back up with each 2x120KVA UPS @120 KW load (common battery configuration) (i.e. the common battery bank for 20 min. backup on 120 KVA	
13.	Battery Ah Calculation Sheet to support 120KVA/120KW for 20 min shall be attached along with qualification bid. Load power factor of 1, End Cell Voltage (ECV) at 1.7V, temperature correction factor @ 27-degree C, design margin 10% and ageing factor 25% shall be considered while calculating the battery backup time.	
14.	Programmable battery testing facility shall be provided to know the battery status. By using battery test mode, the system shall disconnect input power supply at set	

	time period and battery shall discharge through the load. This feature shall be user selectable through the front panel of the system.	
15.	The system shall have battery monitoring facility. This system shall check battery capacity in regular intervals during normal operation of the UPS. The front panel LCD panel shall display the battery autonomy.	
16.	Front panel of the system shall have LCD display for display of input voltage, input frequency, input voltage and frequency of the supply connected in by-pass line, output voltage, output frequency and load connected to the system. It shall also display events occurred by using event recorder. It shall also provide facility to switch UPS ON/OFF, emergency OFF and manual by-pass ON/OFF.	
17.	Mimic diagram shall be provided to know the status of the rectifier, inverter, battery and output bus bar.	
18.	Remote monitoring and Control to be provided over built in Ethernet connectivity (SNMP)	
19.	If necessary, it shall be possible to operate each set of 2 x 120KVA UPS in parallel redundant mode with single battery bank with reduced back-up time.	
20.	Charger (Rectifier) shall be compatible and suitable for various brands and types of batteries.	
21.	Power correction capacitors, if any, shall be in-built only. Externally connected separate units are not acceptable.	
22.	System shall have automatic phase reversal correction facility. (It means in the event of any phase reversal happening at input side of the UPS, the system shall not go to battery mode or trip the UPS but continue to work in normal mode indicating the phase reversal alarm. However, Transfer to Bypass may be inhibited.)	
23.	The successful bidder should submit the Type test report from the Labs accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories) for the offered UPS model. The type test report can be submitted of any rating between 100 KVA and 200 KVA with the Galvanic Isolation output transformer (built-in) of the model offered before calling for Factory inspection.	
24.	If the Isolation Transformer offered externally/after static bypass, Type test report for Isolation Transformer from the Labs authorised by the Govt. for the offered Isolation transformer	
25.	As a part of technical evaluation, if the Institute wish to visit any of the vendor's customer site location, vendor need to arrange the site visit where parallel redundant UPS is working for the offered model and rating 100 kVA and above.	
26.	If required, the Vendor shall conduct efficiency test on the connected load on UPS working at customers site by connecting two power analyzers of the same model (one is at input side of the UPS and other one is at output side) in the presence of Institute representatives. Vendor need to get the clearance from the existing customer to conduct the test and arrange two similar power analyzers (preferable Fluke make) to carry this work.	

27.	Commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site to be carried out by the supplier with load bank for 100 hours at site (load bank should be arranged by the supplier at site with necessary interconnections).	
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SCOPE OF SUPPLY, WORK AND BILL OF MATERIAL

The scope shall include the complete design, engineering, supply, installation, commissioning & testing of 120KVA (2x120KVA) parallel redundant Uninterruptable Power Supply (UPS) systems as follows:

Sl. No.	DESCRIPTION	Qty.	Compliance YES/NO
	Supply, packaging and transportation, loading at factory and unloading at site, Insurance charges, moving the equipment to installation site, Installation, Testing and Commissioning including arranging for hiring of crane, labour, masonry and civil works etc., as required at site (IIT Tirupati, Merlapaka village, Yerpedu mandal, Chittoor district, Andhra Pradesh).		
1.	2x120KVA (2 modules of capacity 120 KVA each connected in parallel) UPS with built-in/external Galvanic Cast Resin Dry Type Isolation transformer, built-in Input Phase reversal correction and protection facility in each module with a 20 min. battery back-up for each Set. (1 Set means 2x120KVA UPS)	2 Sets	
2.	Sealed Maintenance Free VR Lead Acid Battery bank along with battery racks, battery interconnection links, DC Cable of 10-meter distance, battery breaker with individual battery bank including battery stand (2 Banks connected in parallel for a total of 20 minutes back-up time). Makes: Amara Raja / Exide or equivalent subject to the prior approval from the Institute after placing order.	2 Sets	
3.	Built-in Temperature compensation Battery Charging Facility	With each module	
4.	Built in Ethernet connectivity (SNMP) modules for local LAN for monitoring and control through Internet.	Lot	
	Neoprene/Glass wool insulated battery grade copper Cable(s) between UPS and Battery Bank(s) to be laid in flexible corrugated wire re-in-forced PVC flexible pipes. Cross-section area of the cable to be designed as per the full DC current capacity rating. (Approximately Battery banks will be located 10 mtrs. away from UPS Systems)		
5.	2 runs of single core, 150sqmm, Multi-strand FR PVC (or better) insulated copper conductor cables laid in flexible corrugated wire reinforced PVC flexible pipes with suitable crimping terminal ends and glands for UPS INPUT connections from Input Panel to UPS system. Makes: Finolex / or equivalent.	60 mtrs	

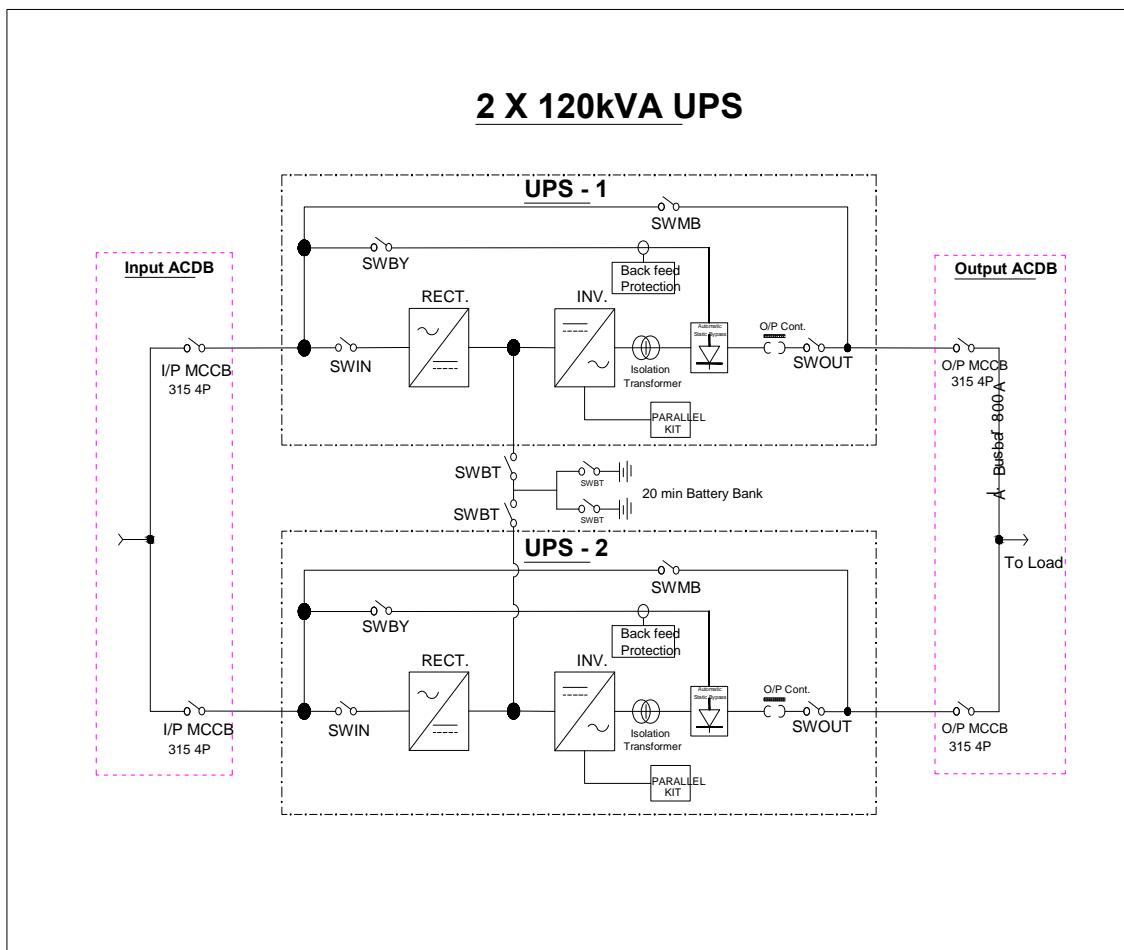
	3 runs of single core, 120sqmm, Multi strand FR PVC (or better) insulated copper conductor cables laid in flexible corrugated wire reinforced PVC flexible pipes with suitable crimping terminal ends and glands for UPS OUTPUT connections from UPS system to the output panel. (Three runs for three phases and two runs for neutral)	80 mtrs	
	Providing grounding as per standard procedure by connecting at 2-points for each equipment/Battery stand using electrolytic grade annealed bare copper earth strips from nearest available earthing busbar including laying and terminating the earth strip. Insulators shall be used for laying the earth strips wherever necessary. Insulators shall be mounted in the cable trench on sidewall/floor as instructed by Institute Engineer for laying the earth strips. Earth strip size: 25X3mm	40 Kgs	
	Connecting Neutral point of the UPS System using 2-separate, FR PVC (or better) insulated copper cables of size 120sq.mm to the dedicated neutral Earth grid available inside/outside the UPS room.	20 mtrs.	
	Documentation (3 copies each) & Software	Lot	
	Instruction Manuals for Operations & Maintenance		
	Service Manuals		
	Factory test reports		
	Any other relevant documents as essential		
	Software if any with license for interfacing to a remote PC. PC will be arranged by IITT		
	Inspection & Testing:		
	<ul style="list-style-type: none"> i) IITT at its discretion may depute Engineers for witnessing the test at factory which will be without any extra cost from that quoted. ii) All the factory test data reports shall be submitted for scrutiny well in advance to obtain the dispatch clearance. iii) Commissioning tests to demonstrate the features and control functions of the UPS along with battery bank at site have to be carried out by the vendor. <p>Pl. note that the Load bank should be arranged by the vendor.</p>		

Terms and Conditions

Sl. No.	DESCRIPTION	Compliance YES/NO
1.	Bidder shall note that the specifications and terms mentioned in Annexure-5, Annexure-6, Annexure-7 and Annexure-8 are final and required to be compliance by the vendor for considering the commercial bid. Bids consisting of total solution only will be considered. Bids consisting of Partial solution will not be considered.	
2.	Bidder shall obtain valid authorization certificate specific to the indent from OEM and upload the same along with technical/qualifying bid. However, in the instance of OEM directly participating in the tender, they need not produce the same but they have to up load the self-declaration.	
3.	Bidder shall obtain a declaration from OEM that the Spares and Service for the proposed model is available for at least 10yrs from the date of installation and upload the same along with Technical/qualifying bid. However, in the instance of OEM directly participating in the tender, they themselves can declare the same and upload along with Technical/qualifying bid.	
4.	Bidder must have to declare his turnover in the preceding three financial years consecutively for UPS products only.	
5.	Both OEM & Bidder's P&L Statement of the company should be positive in last 3 years and never black listed / debarred by any Govt. or public sector undertaking etc. OEM & Bidder need to submit P&L Statement for last 3 financial years.	
6.	Bidder must submit reference reports from existing customers (Government/public sector undertaking/reputed educational institutions/reputed software companies only accepted) who have holding same model of UPS systems and working in the last 24 months, to be produced along with list of clientele. This is should be in parallel redundant configuration of same model. Rating of the UPS should be 2x100KVA and above.	
7.	Bidder should not have been black listed by banking sector, insurance sector or any other Central or State Govt. agency. An undertaking to this effect if required.	
8.	Bidder should have relevant registrations and should not have been declared defaulter by any such department of Govt. of India including Income Tax, GST etc.	
9.	Bidder must have either own or through service provider full-fledged service support facility like tools and spares, along with trained manpower. The bidder has to provide infrastructure support in the form of Direct Service Centre or Authorized Service Centre within the states of Andhra Pradesh, Tamil Nadu, Telangana, Karnataka.	

10.	The service provider shall respond to service calls within 24 hours during the warranty period. Vendor/OEM shall attach the address and telephone numbers of their local/nearest service center(s) along with Technical/qualifying bid	
11.	Bidder shall supply all relevant documents, with original software CDs/hard disk.	
12.	Bidder/OEM shall arrange for training of the UPS system operations at installation site(s).	
13.	All the specifications of the UPS will be tested at factory before accepting the systems. If any special setup is required for testing of the system(s), it is the Vendor's responsibility to arrange the same.	
14.	Batteries can be delivered directly at site from battery OEM. However, Bidder has to provide the OEMs certification of Batteries. Batteries will be tested at site during installation & Commissioning.	
15.	Delivery Schedules	
	i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of PO.	
	ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.	
	iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.	
	iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.	
16.	Bidder / OEM shall attach the technical brochures / Technical catalogues in support of the Make and Model of UPS and batteries and other equipment offered by them in support of their claim of compliance. Website details and email address of the OEM shall be provided for online verification of the same.	
17.	The Bidder shall depute sufficient staff to ensure completion of work well within the specified time. The Bidder has to take permission from IITT for the staff working at site.	
18.	The Bidder shall be responsible for any loss and damage caused to any equipment or system due to negligent handling by his workmen and the cost of the damage/loss will be recovered from the bills payable to him.	
19.	Bidder is responsible for unloading of equipment including hiring of crane, labour as necessary and moving equipment to the installation site.	
20.	Bidder shall arrange all the Tools and Tackles required for completing the work.	
21.	The bidder shall make his own arrangements for the transport and food for his workmen.	
22.	The bidder shall take necessary measures to comply safety rules. IITT shall not be held responsible for the negligence on part of the work men safety.	

23.	Staggered supply of items is expected. However, warranty will start from the date of installation and commissioning of items at site.	
24.	Warranty: System supplied shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores or 60 months from the date of commissioning of the unit at site. Bur whereas Battery bank shall be covered for a minimum warranty period of 26 months from the date of receipt of the material at our Stores or 24 months from the date of commissioning of the unit at site.	
25.	Items shall be delivered, installed and commissioned at our Institute located at Merlapaka village, Yerpedu mandal, Chittoor district, Andhra Pradesh.	



NOTE: Input ACDB and Output ACDB will be provided by IIT Tirupati at free of cost. Necessary interconnections between the system and ACDBs are in the scope of the bidder/vendor.

- **All offered products technical Specifications and Brochures are to be submitted along with the Technical Bid.**
- **The detailed scope of coverage of Warranty shall be provided in the compliance statement -Annexure-VII.**
- The Bidder shall furnish, as part of its bid, documents establishing the conformity of the Equipment that the Bidder proposes to supply under the Contract to the requirements of the Purchaser, as given in the Tender Document.
- The documentary evidence of conformity of the Equipment to the Tender Document may be in the form of written descriptions supported by Brochure / literature / diagrams / certifications, including: (a) A detailed description of the essential technical, functional and performance characteristics of the Equipment that the Bidder is proposing to supply; (b) Technical details of the major subsystems/components of the Equipment.

3.0 TENDER FEE & BID SECURITY DECLARATION DETAILS:

3.1 Tender Fee of Rs.2500/- (Rupees Two Thousand five hundred only) should be submitted through ECS (Bank transfer / NEFT / RTGS) in favour of Indian Institute of Technology Tirupati.

3.2 Bank A/c Details for crediting Tender Fee:

Name : Indian institute of Technology Tirupati Main Account
Bank : State Bank of India
Account No : 35523338208
IFSC Code : SBIN0006677

3.3 Tender Fee and Bid Security Exemption:

I) Micro and Small Enterprises (MSEs):

Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) **for goods produced and services rendered**, are exempted from Tender fee and Bid Security. However, they have to enclose **valid self-attested registration certificate(s)** along with the tender to this effect.

Accordingly, MSEs shall be required to submit valid **Udyam Registration Certificate** for availing benefit under MSE Procurement Policy.

The benefit as above to MSEs shall be available only for Goods produced and services rendered by MSEs. However, traders are excluded from the purview of MSE Procurement Policy.

II) Startup(s):

Startup(s) as recognized by **Department for Promotion of Industry and Internal Trade (DPIIT)**, Govt. of India, are exempted from Tender fee and Bid Security. However, they have to enclose *valid self-attested registration certificate(s)* along with the tender to this effect.

Eligible MSE and start up bidders who seeks exemption from Tender fee/Bid Security as per clause no. (c) above, if they withdraw or modify their bids during the period of validity, or if they are awarded the contract and they fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document, they will be suspended for the period of three years or as decided by the competent authority from being eligible to submit bids for contracts with the entity that invited the bids.

3.4 Other than eligible MSE and Start-up bidders, Bid Security Declaration:

Bidders should have to submit the Bid Security Declaration (As per the format attached in annexure-10) in duly filled and signed condition.

3.5 The Bidders will have to upload scanned copy of Payment details towards tender fee and the same will be accepted only on verification and confirmation by the Institute. Any delay in credit will not be entertained by the Institute. **(As per the format attached in annexure – 9)**

4.0 ELIGIBILITY CRITERIA

4.1 Other Important Documents (OIDs)

Firm Incorporation Certificate, PAN details, GST details are to be provided.

4.2. Statutory Documents:

- I) The Bidder should give self-declaration certificate for acceptance of all terms & conditions of tender documents. A duly completed certificate to this effect is to be submitted as per the **annexure-9**.
- II) The firm should be neither blacklisted / debarred by any Central / State Government / Public Undertaking / Institute nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India. A duly completed certificate to this effect is to be submitted as per **annexure-11**.

III) Experience and Past Performance:

The offered UPS Model should be latest and running in the past 24 months (min.) in Indian environment in any Govt. organization/public sector undertaking/reputed

educational institutions /reputed software companies / any reputed firms only considered. Min. rating of operating UPS (24 months running) should be equal to total capacity of UPS required (for 250 KVA UPS, the total installed capacity should be more than 1000 KVA. Whereas for 120 KVA UPS, the total installed capacity should be more than 240 KVA) by the IIT Tirupati. Rating of the UPS should be same capacity of the dept. requirement or higher rating only accepted.

Bidder need to submit documentary evidence (purchase order copies, installation report, performance report from the client) and declaration towards the above point as per **annexure-12**

- IV) Both OEM & Bidder's P&L Statement of the company should be positive in last 3 years and never black listed / debarred by any Govt. or public sector undertaking etc. OEM & Bidder need to submit P&L Statement for last 3 financial years, i.e. **during 2017-18 to 2019-20 or 2018-19 to 2020-21**. If the bidder is authorized representative of any of the UPS OEM, then OEM and authorized representative, both should submit P&L Statement for last 3 years **as per annexure-13** and declaration regarding "never black listed or debarred by any Govt. or public sector undertaking" **as per annexure-11**
- V) **In case the bidder is a Class-I / Class-II Local Supplier meeting the requirement of minimum 20% Local Content in line with the Public Procurement (Preference to Make in India) Order 2017 No. P-45021/2/2017-PP (BE-II) dated 04 Jun 2020 as amended from time to time. A Self-Declaration Certificate regarding "Class-I/Class-II Supplier" for the tendered items as per the annexure-14 is to be submitted.**
- As per the OM of Department of Promotion for Industry and Internal Trade No. P-45021/102/2019-BE-II-Part(1) dated: 04.03.2021. The bidders can't claim themselves as Class-I local suppliers/Class-II local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. as local value addition.**
- a. 'Local Content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.
 - b. 'Class-I local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50% as defined under this order.
 - c. 'Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has minimum local content of 20% but less than 50%, as defined under this order.

- d. 'Non-local supplier means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%, as defined under this order.
- e. Complaint redressal mechanism: In case any complaint received by the procuring agency or the concerned Ministry/Department against the claim of a bidder regarding local content/domestic value addition in an electronic product, the same shall be referred to STQC.
- f. The bidder shall be required to furnish the necessary documentation in support of the domestic value addition claimed in an electronic product to STQC. If no information is furnished by the bidder, such laboratories may take further necessary action, to establish the bonafides of the claim.
- g. A complaint fee of Rs. 2 lakh or 1% of the value of the domestically manufactured products being procured (subject to a maximum of Rs.5 lakh), whichever is higher, to be paid by Demand Draft to be deposited with STQC. In case, the complaint is found to be incorrect, the complaint fee shall be forfeited. In case, the complaint is upheld and found to be substantially correct, deposited fee of the complainant would be refunded without any interest.
- h. False declarations will be in breach of the Code of Integrity under Rule 175 (1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

VI) The bidder should be OEM or OEM authorized Dealers / Channel partners / Distributors of reputed brand having authorization for sales and after sales support. Valid OEM authorization letter is required to participate in this tender.

VII) Prior Registration and / or Screening of bidders:

Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder registered with the competent authority. The concerned bidder(s) are required to attach the relevant valid Registration Certificate along with the bid for consideration.

“Bidder” (including the term ‘tenderer’, consultant or service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

“Bidder from a country which shares a land border with India” for the purpose of this Order means :-

- An entity incorporated, established or registered in such a country; or

- A subsidiary of an entity incorporated, established or registered in such a country or
- An entity substantially controlled through entities incorporated, established or registered in such a country; or
- An entity whose beneficial owner is situated in such a country; or
- An Indian (or other) agent of such an entity; or
- A natural person who is a citizen of such a country; or
- A consortium of joint venture where any member of the consortium or joint venture falls under any of the above.

The detailed terms & conditions issued from time to time in this regard by Government of India will be applicable.

VIII) Authorized Representatives:

Bids of bidders quoting as authorised representative of a principal manufacturer would also be considered to be qualified, provided:

- (i) Their principal manufacturer meets all the criteria above without exemption, and
- ii) The principal manufacturer furnishes a legally enforceable tender-specific authorisation assuring full guarantee and warranty obligations as per the general and special conditions of contract;
and
- iii) The bidder himself should have been associated, as authorised representative of the Principal Manufacturer for same set of services as in present bid (supply, installation, satisfactorily commissioning, after sales service as the case may be) for same or similar item for past three years ending on bid opening date.

4.3 TECHNICAL CRITERIA

Bidders should comply the specification of the tendered item in all respect. The detailed format is attached at annexure-1 to 8. The bidder is to complete the same in all respect and submit accordingly

5. FINANCIAL BID DETAILS

- 5.1 Financial bid i.e. BOQ given with tender (in **Excel format**) to be downloaded first and uploaded after filling all relevant information strictly as per the format failing which the offer is liable for rejection. Kindly quote your offer on FOR IIT Tirupati (inclusive of all taxes and charges). **Vendor should quote prices in BOQ only, offers indicating rates anywhere else shall be liable for rejection.**
- 5.2 Concessional Custom Duty / Concessional GST is applicable to IIT Tirupati as a Research Institution. Necessary Certificate to this effect shall be provided by IIT Tirupati to the supplier.

6. TIME SCHEDULE:

SL NO	PARTICULARS	DATE	TIME
01	ONLINE PUBLICATION/DOWNLOAD OF TENDER	09.06.2022	11.00 hrs
02	CLARIFICATIONS START DATE	09.06.2022	11.00 hrs
03	CLARIFICATIONS END DATE	16.06.2022	18.00 hrs
04	UPLOADING OF CORRIGENDUM/CLARIFICATIONS AFTER THE RECEIPT OF QUERIES (IF ANY)	20.06.2022	18.00 hrs
05	BID SUBMISSION START DATE	21.06.2022	10.00 hrs
06	BID SUBMISSION DEADLINE	05.07.2022	15.00 hrs
07	TECHNICAL BID OPENING	06.07.2022	15.00 hrs
08	OPENING OF THE FINANCIAL BID	To be announced later	
<ul style="list-style-type: none">• QUERIES RELATED TO THE TENDER DOCUMENT MAY BE FORWARDED TO aelectrical1_eu@iittp.ac.in with cc to purchase@iittp.ac.in AS PER THE FORMAT PROVIDED IN THE ANNEXURE-16 BEFORE THE CLARIFICATIONS END DATE. FURTHER QUERIES AFTER 16.06.2022@18.00 HRS WILL NOT BE CONSIDERED.			

7. AVAILABILITY OF TENDER

The tender document can be downloaded from <http://eprocure.gov.in/eprocure/app> and be submitted only through the same website.

8. BID VALIDITY PERIOD

The bid will remain valid for 90 days from the date of opening as prescribed by IIT Tirupati. A bid valid for a shorter period shall be rejected, being non-responsive.

9. BID SUBMISSION

9.1 Instruction to Bidder

- I) Bidders are required to enrol on the e-Procurement module of the **Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>)** by clicking on the link "**Online Bidder Enrolment**" on the CPP Portal. **The registration is completely free of charge.**
- II) Possession of a valid Class II/III DSC in the form of smart card / e-token is a prerequisite for registration and participating in the bid submission activities. DSCs can be obtained from the authorised certifying agencies recognized by CCA India (e.g. Sify/TCS/nCode/eMudhra etc).

- III) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- IV) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
- V) The Bidders are required to log in to the site through the secured log-in by entering their respective user ID / password and the password of the DSC.
- VI) The CPP portal also has user manuals with detailed guidelines on enrolment and participation in the online bidding process. The user manuals can be downloaded for reference.

9.2 TENDER CLARIFICATION

- I) In case the bidders require any clarification regarding the tender documents, they are requested to forward their queries to aeelectrical1_eu@iittp.ac.in with cc to purchase@iittp.ac.in on or before 16.06.2022@ 18.00 hrs as per the format of Annexure-16.
- III) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

9.3 ONLINE BID SUBMISSION PROCEDURE

Cover-1: The file should be saved in a PDF version numbered sequentially and should comprise of the following items:

Packet-1:

Duly Completed Scanned PDF copy of, PAN, GST, Firm Registration certificate and annexures with relevant supporting documents

Only the relevant documents as per the tender clauses are to be uploaded along with duly completed checklist as per the annexure-17. Uploading of other than the required documents may liable for rejection of the bid.

Cover-2:

A standard BOQ format has been provided in excel format. Bidders are required to download the BOQ excel file and fill their financial offer on the same BOQ format. After filling the same, submit it online in excel format, without changing the financial template format.

Note:

If the bid is incomplete and / or non-responsive it will be rejected during technical evaluation. The bidder may not be approached for clarifications during the technical evaluation. So, the bidders are requested to ensure that they provide all necessary details in the submitted bids.

10. BID OPENING

- 10.1 Technical Bids will be opened on **06.07.2022 @ 15.00 Hrs.**
- 10.2 Financial Bids of the eligible bidders will be opened on a later date. The date and time for opening of Financial Bids will be announced later.
- 10.3 **Bids should be summarily rejected, if tender is submitted other than through online or original tender fee/Bid security declaration are not submitted within stipulated date / time.**

11. BID EVALUATION

Based on results of the Technical evaluation IIT Tirupati evaluates the Commercial Bid of those Bidders who gets qualify in the Technical evaluation. The Commercial Bid with the lowest price will be the highest evaluated bid.

11.1 Purchase Preference

I) Micro and Small Enterprises (MSEs):

Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) **for goods produced and services rendered**, may be provided following purchase preference:

Item wise Quantity	Price Quoted by MSE	How the tender shall be finalized
Cannot be split	L1	Full Order on MSE
Cannot be split	Not L1 but within L1 + 15%	Full Order on MSE subject to matching L1 Price

II) Preference to Make in India

- a) In procurement goods or works which are covered under by para 3(b) of the extant Public Procurement (Preference to Make in India) Order 2017 dated 04 June 2020 and which are **divisible** in nature, the “Class-I Local Supplier” shall get purchase preference over “Class-II Local Supplier” as well as “Non-Local Supplier” as per following procedure:
- i) **Among all qualified bids, the lowest bid will be termed as L1. If L1 is “Class-I Local Supplier”, the contract for full quantity will be awarded to L1.**

- ii) **If L1 bid is not a “Class-I Local Supplier”**, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the “Class-I Local Supplier” will be invited to match L1 price for the remaining 50% quantity subject to the Class-I Local Supplier’s quoted price falling within the margin of L1 + 20%, and contract for that quantity shall be awarded to such “Class-I Local Supplier” subject to matching the L1 price. In case such lowest eligible “Class-I Local Supplier” fails to match L1 price or accepts less than the offered quantity, the next higher “Class-I Local Supplier” within the margin of L1 + 20% shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such quantity may be ordered on the L1 bidder.

- b) In procurement goods or works which are covered under by para 3(b) of the extant Public Procurement (Preference to Make in India) Order 2017 dated 04 June 2020 and which are **not divisible** in nature, and in procurement of services where the bid is evaluated on price alone, the “Class-I Local Supplier” shall get purchase preference over “Class-II Local Supplier” as well as “Non-Local Supplier” as per following procedure:
 - i) **Among all qualified bids, the lowest bid will be termed as L1.**
If L1 is “Class-I Local Supplier”, the contract will be awarded to L1.

 - ii) **If L1 is not a “Class-I Local Supplier”**, the lowest bidder among the Class-I Local Supplier, will be invited to match the L1 price subject to Class-I Local Supplier’s quoted price falling within the margin of L1 + 20%, the contract shall be awarded to such Class-I Supplier subject to matching the L1 price.

 - iii) **In case such lowest eligible Class-I Local Supplier fails to match the L1 price, the “Class-I Local Supplier”** with the next higher bid within the margin of L1 + 20% shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the of Class-I Local Supplier within the margin of L1 + 20%, the contract may be awarded to the L1 bidder.

 - iv) **Class-II Local Supplier will not get purchase preference.**

12. PAYMENT TERMS

No advance payment will be made in any case. Bills in Duplicate should be sent and the payment shall be released generally within 30 days, only after it is ensured that the items / quality of the items supplied are to the entire satisfaction of IIT Tirupati and completed the entire work within the stipulated delivery schedule. If any item is found defective, or not of the desired quality etc., the same should be replaced by the firm(s) immediately for which no extra payment shall be made.

13. WARRANTY OF QUALITY AND QUANTITY

13.1 For **item1 and item 2** the awardee shall give System supplied (excluding Battery bank) shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores **or** 60 months from the date of commissioning of the unit at site for trouble free and satisfactory performance. Whereas Battery bank shall be covered for a minimum warranty period of 26 months from the date of receipt of the material at our Stores **or** 24 months from the date of commissioning of the unit at site for trouble free and satisfactory performance on successful completion of supply, and acceptance of supplied items.

13.2 The awardee shall give warranty that all items are as per specification(s), conforming to the specified design and there are no defects in the process of manufacturing, packaging, transportation and delivery.

13.3 Upon receipt of notice from IIT Tirupati for defective material, the firm shall **within 15 days** of receipt of the notice, replace the defective material, free of cost at the destination. The firm shall take over the defective material at the time of their replacement. No claim whatsoever shall lie on IIT Tirupati for the replaced goods thereafter. If the firm fails to replace the defective goods within a reasonable period, IIT Tirupati may proceed to take such remedial actions as may be necessary, at the company's risk and expense.

14. LIQUIDATED DAMAGES

In case of delay in Supply by the stipulated date, IIT Tirupati reserves the right of imposing penalty @0.5% per week on the value of the undelivered items subject to maximum 10% of the cost of undelivered items.

15. DELIVERY SCHEDULE

15.1 The successful bidder should execute the order successfully i.e.
Delivery: FOR IIT Tirupati

Item-1: 2 Sets out of 4 sets:

- i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) within 2 months from the date of release of PO.
- ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.
- iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.
- iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.

Item-1: Balance 2 Sets:

- i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of PO.
- ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.
- iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.
- iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.

Item-2: 2 sets

- i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of PO.
- ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.
- iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.
- iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.

Supply, Installation of ordered item at IIT Tirupati permanent campus, Venkatagiri Road, Yerpedu Post, Tirupati, Chittoor District from the date of issue of the purchase order. In case of any damage/Broken/Expired items found, the item(s) should be replaced **within 15 days** at IIT Tirupati. The bidder has to make own arrangement for unloading and positioning of items at the desired location of IIT Tirupati.

16. PERFORMANCE SECURITY DETAILS

- 16.1 The successful tenderer will have to deposit the performance security valid for **63 Months** in the form of DD / TDR / FDR / Bank Guarantee @**03% of the total order value** at the earliest from the date of commissioning of the items. No interest will be paid by IIT Tirupati on the deposit.
- 16.2 Performance Security will be refunded to the supplier, after it duly performs and completes the contract/warranty period in all respects.
- 16.3 Performance Security will be forfeited if the firm fails to perform/abide by any of the terms or conditions of the contract.
- 16.4 In case, the firm fails to execute the order successfully, within specified delivery period, the same goods/items will be procured from open market and the difference

of cost, if any, will be recovered from Performance Security or from pending bill(s) of the defaulting firm or from both in case the recoverable amount exceeds the amount of Performance Security.

17. TERMS AND CONDITIONS

17.1 Termination for Insolvency

- I) The IIT Tirupati may at any time terminate the Contract by giving a written notice to the awarding firm, without compensation to the firm, if the firm becomes bankrupt or otherwise insolvent as declared by the competent Court, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the department.
- II) IIT Tirupati and/or the firm are entitled to withdraw/cancel the rate contract by serving one-month notice on each other. However, once a purchase order is placed on the supplier for supply of a definite quantity in terms of the rate contract during the validity of the rate contract, that purchase order becomes a valid and binding contract.
- III) The courts of Tirupati alone will have the jurisdiction to try any matter, dispute or reference between the parties arising out of this purchase. It is specifically agreed that no court outside and other than Tirupati Court shall have jurisdiction in the matter

17.2 Force Majeure

- I) Should any force majeure circumstances arise, each of the contracting parties be excused for the non-fulfilment or for the delayed fulfilment of any of its contractual obligations, if the affected party within 15 days of its occurrence informs in a written form the other party.
- II) Force Majeure shall mean fire, flood, natural disaster or other acts such as war, turmoil, sabotage, explosions, epidemics, quarantine restriction, strikes, and lockouts i.e. beyond the control of either party.

17.3 Arbitration

- I) All disputes of any kind arising out in connection with the executing the order shall be referred by either party (IIT TIRUPATI or the bidder) after issuance of 30 days' notice in writing to the other party clearly mentioning the nature of dispute to a single arbitrator acceptable to both the parties. The venue for arbitration shall be IIT TIRUPATI India. The jurisdiction of the

courts shall be Tirupati, Andhra Pradesh, India.

17.4 Other Conditions

- I) The bidder has to upload the relevant & readable files only as indicated in the tender documents. In case of any irrelevant or non-readable files, the bid may be rejected.
- II) IIT Tirupati will not be liable for any obligation or supplies made unless the Official Purchase Order has been placed by the Purchase Department.
- III) IIT Tirupati reserves the right to accept or reject any or all the tenders in part or in full or may cancel the tender, without assigning any reason thereof.
- IV) IIT Tirupati reserves the right to relax / amend / withdraw any of the terms and conditions contained in the Tender Document without assigning any reason thereof. Any inquiry after submission of the quotation will not be entertained.
- V) IIT Tirupati reserves the right to modify/change/delete/add any further terms and conditions prior to issue of purchase order.
- VI) In case the bidders/successful bidder(s) are found in breach of any condition(s) at any stage of the tender, Performance Security shall be forfeited.
- VII) False declaration/documents will be in breach of the Code of Integrity under Rule 175(1) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.
- VIII) Conditional tenders will not be considered in any case.
- IX) In case of doubt in material, the expenditure on testing of equipment will be borne by the tenderer.
- X) Institute reserve the right to increase/decrease the order quantity at any period of times during the validity of the contract.
- XI) **IIT Tirupati may issue amendment/corrigendum to tender documents before due date of submission of bid. Any amendment/corrigendum to the tender document if any, issued by IIT Tirupati will be posted on CPP Portal. For the bidders, submitting bids on downloaded tender document, it is 'bidders' responsibility to check for any amendment/corrigendum on the website of IIT Tirupati or check for the same CPP Portal before submitting their duly completed bids.**

UNDERTAKING

To
The Registrar,
 Indian Institute of Technology
 Tirupati-Renigunta Road, Settipalli post,
 Tirupati 517506.

Tender No. IITT/EU/2022-23/30 dated: 09.06.2022.

Name of the Tender/Supply: Notice Inviting Tender for Supply, installation, testing and Commissioning of High Performance Parallel Redundant with Inbuilt/external Galvanic Isolation Transformer UPS.

Sir,

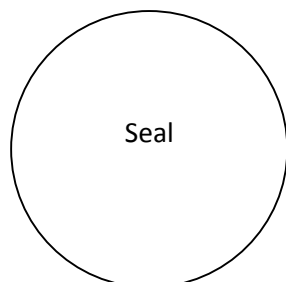
I/we hereby submit our bid for Supply, installation, testing and Commissioning of High Performance Parallel Redundant with Inbuilt/external Galvanic Isolation Transformer UPS.

I/ We enclosed here with the following in favor of Indian Institute of Technology Tirupati towards Tender Fee.

Particular	Amount	Payment Reference Details	Payment Date
Tender Fee (Including Tax)	2500/-		

1. I / We hereby reconfirm and declare that I / We have carefully read, understood & complying the above referred tender document including instructions, terms & conditions, scope of work, schedule of quantities and all the contents stated therein. I / We also confirm that the rates quoted by me / us are inclusive of all taxes, duties etc., applicable as on date.
2. I /we have gone through all terms and conditions of the tender document before submitting the same.

Date:
Place:



Authorized Signatory

Name:

Designation:
Contact No :

On Company Letter Head

Bid Security Declaration

To
The Registrar,
Indian Institute of Technology
Tirupati-Renigunta Road, Settipalli post,
Tirupati 517506.

Tender No. IITT/EU/2022-23/30 dated: 09.06.2022.

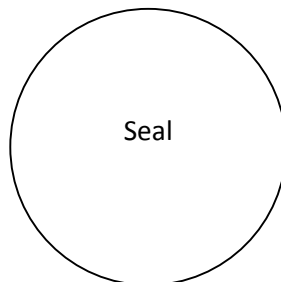
Name of the Tender/Supply: Notice Inviting Tender for Supply, installation, testing and Commissioning of High Performance Parallel Redundant with built-in Galvanic Isolation Transformer UPS.

Sir,

We, the undersigned declare that

1. We understood that, according to the tender conditions, bids must be supported by a Bid Security Declaration.
2. We accept that we will automatically be suspended from being eligible for bidding in any contract with the Institute for the period of **3 years** starting from the bid closing date, if we are in breach of our obligation(s) under the bid conditions, because we;
 - (a) have withdrawn our bid during the period of bid validity specified in the letter of bid; or
 - (b) having been notified of the acceptance of our bid by the institute during the period of bid validity, (i) fail or refuse to execute the contract, if required, or (ii) fail or refuse to furnish the performance security, in accordance with the tender conditions.

Date:
Place:



Authorized Signatory

Name:

Designation:

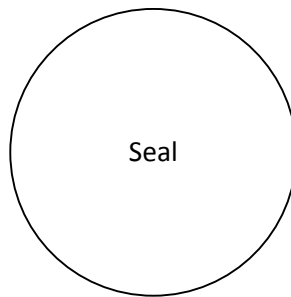
Contact No :

**CERTIFICATE
(To be provided on letter head of the firm)**

I hereby certify that the above firm neither blacklisted / debarred by any Central/State Government/Public Undertaking/Institute nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India.

I also certify that the above information is true and correct in every respect and in any case at a later date it is found that any details provided above are incorrect, any contract given to the above firm may be summarily terminated and the firm may be blacklisted.

Date:



Place:

Authorized Signatory

Name:

Designation:

Contact No.:

a) **Experience: (As per tender Clause No.4.2 (III))**

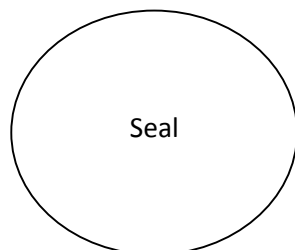
Year	Name of the Item with Specification (Technical specification brochure to be attached)	Purchase Order No. & Date (Copy of the Orders to be attached)	Date of successfully completion of SITC of ordered Item (copy of report from client to be attached)	Contact Details of Client
2017-18				
2018-19				
2019-20				
2020-21				

b) **Past Performance: (As per tender Clause No.4.2 (III))**

Year	Purchase Order No. & Date (Copy of the Orders to be attached)	Quantity	Date of successfully completion of SITC of ordered Item (copy of report from client to be attached)	Whether supplied item(s) is in successful operation for at least one year (Certificate from client to be attached)	Contact Details of Client
2017-18					
2018-19					
2019-20					
2020-21					

Date :

Place :



Authorized Signatory

Name:

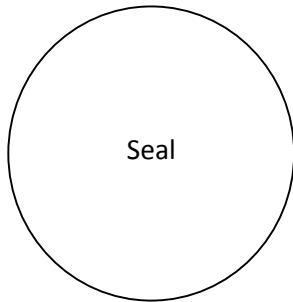
Designation:

Contact No.:

Annual Turnover and Profit Details:

Evaluation Criteria				Remark	Specific page no. where the proof of documents are enclosed
Bidder's Annual Turnover and Profit for last three financial years	Financial Year	Turnover in Rs.	Annual Profit in Rs.	-	
	2020-21			Supporting Documents are to be attached along with the Annexure-13 [i.e. Audited financial Statements or Financial Statements showing turnover duly signed by a Chartered Accountant are to be submitted]	
	2019-20				
	2018-19				
	2017-18				

Date:



Place:

Authorized Signatory:

Name:

Designation:

Contact No.:

Format for Self-Declaration under preference to make in India order

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II date. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated: 04 June 2020. We hereby certify that we M/s. _____ (supplier name) are **CLASS-I/Class-II (Please specify clearly)** supplier meeting the requirement of local content more than 20% as defined in above orders for the material against Enquiry No. IITT/EU/2022-23/30 dated: 09.06.2022.

Details of location at which local value addition will be made as follows: (Complete address to be mentioned)

Percentage of Local Content: _____

(As per the OM of Department of Promotion for Industry and Internal Trade No. P-45021/102/2019-BE-II-Part(1) dated: 04.03.2021. The bidders can't claim themselves as Class-I local suppliers/Class-II local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. as local value addition)

We also understand, false declarations will be in breach of the Code of Integrity under rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Seal and signature of Supplier

Date :

Place :

COMPANY DETAILS

Name of the bidder		
Date of Incorporation /		
PAN Number		
GST Registration Number		
Bidder's Bidding Capacity for the tendered items (As a Manufacturer/ Trader/ dealer / channel partner / system integrator, etc.)		
Bank Details	Account Number	
	IFS Code	
	Bank Name	
	Branch Name	
Registered Office Address		
Authorized Signatory Details (Company/Firm Authorization by the competent authority, to be attached)	Name	
	Designation	
	Email	
	Phone	
Details of Contact other than Authorized Signatory	Name	
	Designation	
	Email	
	Phone	

Date:

Signature and Seal of the Tenderer:

Place:

Name in Block Letter:

Designation:

Contact no.

ANNEXURE-16

Format for submitting the queries through email to IIT Tirupati

QUERIES RELATED TO THE TENDER DOCUMENT MAY BE FORWARDED TO aelectrical1_eu@iitp.ac.in with cc to purchase@iitp.ac.in AS PER THE FORMAT PROVIDED BELOW BEFORE THE CLARIFICATIONS END DATE. FURTHER QUERIES AFTER **16.06.2022@18.00** HRS WILL NOT BE CONSIDERED.

Tender No. IITT/EU/2022-23/30 dated: 09.06.2022.

Name of the Tender/Supply: Notice Inviting Tender for Supply, installation, testing and Commissioning of High Performance Parallel Redundant with Inbuilt/external Galvanic Isolation Transformer UPS.

S No	Tender Clause No	Bidder(s) queries	IIT Tirupati response

Signature and Seal of the Tenderer:

Name in Block Letter:

Designation:

Full Address:

Contact no.:

Date:

CHECKLIST FOR BIDDERS TO BE SUBMITTED IN DULY FILLED AND SIGNED

Tender Clause No.	Name of the Document	Document Particulars	Submitted (Yes/No)	Page No. of the attached Document
3.1	Tender Fee			
3.4	Bid security Declaration (Annexure-10)			
3.3	Valid Tender Fee / EMD Exemption Certificate			
4.1.	PAN Card			
	Incorporation/Registration certificate of company			
	GST Registration copy			
4.2.(I)	Tender acceptance letter (Annexure 9)			
4.2.(II)	Non-Blacklisting undertaking (Annexure 11)			
4.2.(III)	<p>The offered UPS Model should be latest and running in the past 24 months (min.) in Indian environment in any Govt. organization/public sector undertaking/reputed educational institutions /reputed software companies only considered. Min. rating of operating UPS (24 months running) should be equal to total capacity of UPS required (for 250 KVA UPS, the total installed capacity should be more than 1000 KVA. Whereas for 120 KVA UPS, the total installed capacity should be more than 240 KVA) by the IIT Tirupati. Rating of the UPS should be same capacity of the dept. requirement or higher rating only accepted.</p> <p>Bidder need to submit documentary evidence (purchase order copies, installation report, performance report) and declaration towards the above point as per annexure-12</p>			
4.2.(IV)	<p>Both OEM & Bidder's P&L Statement of the company should be positive in last 3 years and never black listed / debarred by any Govt. or public sector undertaking etc. OEM & Bidder need to submit P&L Statement for last 3 financial years, i.e. during 2017-18 to 2019-20 or 2018-19 to 2020-21. If the bidder is authorized representative of any of the UPS OEM, then OEM and authorized representative, both should submit P&L Statement for last 3 years as per annexure-13 and declaration regarding "never black listed or debarred by any Govt. or public sector undertaking as per annexure-11</p>			
4.2.(V)	The bidder should be a <u>Class-I/Class-II Local Supplier</u> meeting the requirement of minimum <u>20% Local</u>			

	<u>Content</u> in line with the Public Procurement (Preference to Make in India) Order 2017 No. P-45021/2/2017-PP (BE-II) dated 04 Jun 2020. A Self-Declaration Certificate regarding “Class-I & Class-II Supplier” for the tendered items as per the Annexure-14 is to be submitted.			
4.2.(VI)	The bidder should be OEM or OEM authorized Dealers / Channel partners / Distributors of reputed brand having authorization for sales and after sales support. Valid OEM authorization letter is required to participate in this tender.			
4.2.(VII)	Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder registered with the competent authority. The concerned bidder(s) are required to attach the relevant valid Registration Certificate along with the bid for consideration.			
4.3	Technical Compliance Statement : Annexures 1 to 8.			
11.1 (I)	Purchase Preference: (if applicable) Micro and Small Enterprises (MSEs):			
11.2 (II)	Purchase Preference: Make in India			
12	Payment Term: Within 30 days after SITC.			
13.	Onsite Warranty: The awardee shall give System supplied (excluding Battery bank) shall be covered for a minimum warranty period of 62 months from the date of receipt of the material at our Stores or 60 months from the date of commissioning of the unit at site for trouble free and satisfactory performance. Whereas Battery bank shall be covered for a minimum warranty period of 26 months from the date of receipt of the material at our Stores or 24 months from the date of commissioning of the unit at site for trouble free and satisfactory performance on successful completion of supply, and acceptance of supplied items for both item1 and item 2.			
15	Delivery: FOR IIT Tirupati Item1: 2 Sets i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) within 2 months from the date of release of PO. ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation. iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT. iv) Installation & commissioning shall be completed within 1 month from the date of items received at site			

	<p>on mutual agreed dates based on readiness of installation site.</p> <p>Item1: 2 Sets</p> <p>i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of PO.</p> <p>ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.</p> <p>iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.</p> <p>iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.</p> <p>Item2:</p> <p>i) Shall intimate the readiness of UPS systems for conducting Factory Acceptance Test (FAT) after 4 months but before 5 months from the date of release of PO.</p> <p>ii) Thereafter FAT will be conducted on mutual agreed date(s) within 2 weeks from the date of intimation.</p> <p>iii) Shall deliver the items at site within 2 weeks from the date of successful completion of FAT.</p> <p>iv) Installation & commissioning shall be completed within 1 month from the date of items received at site on mutual agreed dates based on readiness of installation site.</p>			
8	Bid validity: 90 days from the date of opening of the tender			
	Company details : Annexure-15			
	Self-declaration certificate for acceptance and compliance with the Integrity Agreement as per Annexure 18.			

Note:

- 1) **Submission of tender without the above mentioned documents will lead to rejection/disqualification of the tender.**
- 2) **It is mandatory for the bidder to assign page numbers to the tender documents and the same has to be mentioned in the above checklist.**

Signature of the bidder with stamp

INTEGRITY PACT

To,

The Registrar,
Indian Institute of Technology,
Tirupati.

Sub: Submission of Tender for the _____ at Indian
Institute of Technology, Tirupati.

Sir/ Madam,

I/We acknowledge that the Indian Institute of Technology, Tirupati is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that **THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE** of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by Indian Institute of Technology, Tirupati. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, Indian Institute of Technology, Tirupati shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/ bid.

Yours faithfully,

(Duly authorized signatory of the Bidder)

INTEGRITY PACT

This **INTEGRITY PACT** is made and executed at..... on this day of..... , 2022

BETWEEN

The Registrar, Indian Institute of Technology Tirupati, an autonomous body of the Department of Higher Education, Ministry of Education, Govt, of India having its office located at Yerpedu – Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517619 (hereinafter referred to as “**The Principal**” which terms or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the **First Part**;

And

M/s..... a company incorporated under the Companies Act,..... through its representative/authorized signatory (insert name and designation of the officer) vide resolution dated passed by the Board of Directors, having its office at(hereinafter referred to as “**The Bidder/Contractor**” which term or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the **Second Part**.

Preamble

The Principal intends to award, underlaid down organizational procedures, contract/s for _____ The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidders) and / or Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

- a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- c. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there is a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition, can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s)/ Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidders(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c. The Bidder(s)/ Contractor(s) will not commit any offense under the relevant IPC/PC Act; further the Bidders(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only

e. The Bidder(s)/ Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) /Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidders)/ Contractors) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings.

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in “Guidelines on Banning of business dealings”.

Section 6 - Equal treatment of all Bidders / Contractors / Subcontractors

(1) In the case of Sub-contracting, the Principal Contractor shall take the responsibility for the adoption of the Integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate this provisions.

Section 7 - Criminal charges against violating Bidder(s) / Contractors) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitor

(1) The Principal appoints a competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders/Contractors as confidential. He/she reports to Secretary, MoE.

(3) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidders)/ Contractor(s)/ Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on

‘Non-Disclosure of Confidential Information and of ‘Absence of Conflict of Interest’. In case of any conflict of interest arising at a later date, the IEM shall inform Secretary, D/o Higher Education.

(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Secretary, D/o Higher Education within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the Secretary, D/o Higher Education, a substantiated suspicion of an offence under relevant I PC/ PC Act, and the Secretary, MoE has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word ‘**Monitor**’ would include both singular and plural.

Section 9 - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealing.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Secretary, D/o Higher Education.

Section 10 - Other provisions

(1) This agreement is subject to Indian Law. The place of performance and jurisdiction is the Office of the Principal, i.e. New Delhi.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement with their original intentions.

(5) Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.

(6) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

(7) The actions stipulated in this Integrity Pact are without prejudice to any other legal action(s) that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals and executed this INTEGRITY PACT as of the day/month/year first above written:

For and on behalf of

**THE REGISTRAR,
Indian Institute Technology Tirupati (First Party)**

SIGNED, SEALED, AND DELIVERED by

Name:.....

Designation:.....

Address:.....

Authorized Signatory

For and on behalf of

M/s.....(Second Party)

SIGNED, SEALED AND DELIVERED by

Name _____

Designation:.....

Address:.....

Representative/authorized signatory

Vide resolution dated..... passed by the Board of Directors

In the presence of Witness:

1.

2.