

TECHNICAL BID EVALUATION REPORT

TENDER NO.: AAI/ANS/CNS/VOML/2020/MODULAR UPS/T-07 Dated: 08/03/2021 (E-Tender ID.: 2021_AAI_72373_01)
SITC& CAMC OF MODULAR UPS FOR CNS AT MANGALURU INTERNATIONAL AIRPORT

Tender Document reference	Documents for compliance	COMPLIED/NOT COMPLIED				
		ECS Engineering Pvt. Ltd	Nikom InfraSolutions Pvt. Ltd.	Infonpower systems Pvt. Ltd.	BBN Energy systems Pvt. Ltd.	Infosoft digital design and Services Pvt. Ltd.
12(i)	Annexure-I: Sealed and signed Undertaking of unconditional acceptance prepared in the letter head of the bidder	Complied	Complied	Complied	Complied	Complied
12(ii)	Tender Fee: The Non-Refundable Tender Fee of ₹.1770/- (Rupees One Thousand Seven Hundred and Seventy only) shall be submitted through the online payment option available in CPP Portal. Copy of successful online transaction details towards payment	Complied	Complied	Complied	Complied	Complied
Ref. Clause: 12.7	Duly signed and sealed copy of NSIC certificates if applicable.	Complied	Complied	Complied	Complied	Complied
12(iii) Ref. Clause: 12.3.7	Annexure-II: Power of Attorney in respect of the Authorized Signatory as per Annexure-II	Complied	Complied	Complied	Complied	Complied
12(iv) Ref. Clause: 12.4	Annexure-III: All bidders shall submit Bid Security Declaration (Earnest Money Declaration) as per Annexure-III	Complied	Complied	Complied	Complied	Complied
12(v)	Annexure-IV: Duly filled and signed "Pre-Qualification & Technical Bid" Checklist as per Annexure-IV	Complied	Complied	Complied	Complied	Complied
12(vi) Ref. Clause: 12.3.5	Annexure-V: Undertaking on not blacklisting, as per Annexure-V	Complied	Complied	Complied	Complied	Complied

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12(vii) Ref. Clause: 12.3.1 to 12.3.4	Annexure-VI: Declaration/Undertaking as per Annexure- VI.a /VI.b and Proof of being Original Equipment Manufacturer (OEM) or Authorized Representative (AR) of OEM or System Integrator (SI).	Complied	Complied	Complied	Complied	Complied
12(viii)	Copy of valid Permanent Account number (PAN)	Complied	Complied	Complied	Complied	Complied
12(ix)	Copy of GST registration certificate.	Complied	Complied	Complied	Complied	Complied
12(x) Ref. Clause: 12.10.1	Copies of relevant purchase orders duly signed by authorized signatory as a proof of experience of works claimed by the bidder. Refer clause 12.10.1 for guidance.	Complied	Complied	Complied	Complied	Complied
12(xi) Ref. Clause: 12.10.2	Performance/Experience/completion certificates duly signed by authorized signatory and issued by the end user.	Complied	Complied	Complied	Complied	Complied
12(xii) Ref. Clause: 12.9	Certified copy issued from Chartered Accountant for certifying financial turnover for the last THREE YEARS and abridged Balance Sheets along with Profit & Loss Account.	Complied	Complied	Complied	Complied	Complied
12(xiii) Ref. Clause: 13.1	Duly signed, stamped and digitally signed Section A – General Conditions of Contract.	Complied	Complied	Complied	Complied	Complied
12(xiv) Ref. Clause: 13.2	Duly signed, stamped and digitally signed Section B – Special Conditions of Contract. Refer clause 13.2	Complied	Complied	Complied	Complied	Complied
12(xv) Ref. Clause: 13.3	Duly Filled signed, stamped and digitally signed Section C – Technical & Qualitative Requirement along with necessary documents/technical brochures in support of Technical compliance.	Not Complied (Refer attached Section C Part A&B evaluation report)	Complied (Refer attached Section C Part A&B evaluation report)	Not Complied (Refer attached Section C Part A&B evaluation report)	Complied (Refer attached Section C Part A&B evaluation report)	Not Complied (Refer attached Section C Part A&B evaluation report)
12(xvi) Ref. Clause: 13.4	Duly signed, stamped and digitally signed Section D: Notice Inviting Tender (NIT).	Complied	Complied	Complied	Complied	Complied

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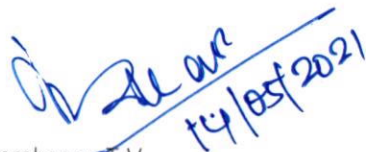
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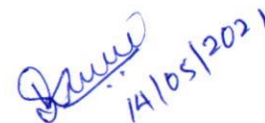
12(xvii) Ref. Clause: 13.5	ANNEXURE-VII (Un-priced Bill of Quantity) with Make and Model Number of offered equipment(s) & accessories WITHOUT INDICATING THE PRICE.	Not Complied (No Model number for Isolation transformer and BMS)	Complied	Complied	Complied	Not Complied (No Model number for Isolation transformer, BMS, Batteries)
12(xviii) Ref. Clause: 13.6	ISO certificate(s), in respect of the OEM(s) of the offered products. Refer clause 13.6	Not Complied	Complied	Not Complied	Complied	Not Complied
Ref. Clause: 13.3	Signed & sealed copy of Technical brochures and other documents towards proof of compliance of Section-C.	Not Complied	Complied	Not Complied	Complied	Not Complied
Annexure- XVI	Declaration for clause no. 20 of NIT as per Annexure-XVI	Complied	Complied	Complied	Complied	Complied
Annexure- XVII	Declaration for Non-applicability of E-Invoicing under GST Act as per Annexure-XVII	Complied	Complied	Not Complied	Complied	Complied
---	Any other relevant document as per tender requirements	---	---	---	---	---



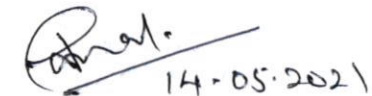
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SECTION- C PART A &B: SYSTEM DESIGN AND TECHNICAL REQUIREMENTS**BILL OF QUANTITY FOR SITC & CAMC OF MODULAR UPS.**

SL. No.	Description of item	Quantity	COMPLIED/NOT COMPLIED				
			ECS Engineering Pvt. Ltd	Nikom InfraSolutions Pvt. Ltd.	Infonpower systems Pvt. Ltd.	BBN Energy systems Pvt. Ltd.	Infosoft digital design and Services Pvt. Ltd.
01	SITC of Modular UPS Frame Scaled with power modules of minimum rating of 10kVA or higher configured for delivering a minimum output of 20kVA with N+N Redundancy along with necessary control Modules, Status and display system, Battery Banks, Battery Management System and external output isolation transformer of minimum 40kVA rating. (2 Sets of UPS frames, configured in parallel load sharing mode) a) Minimum 5 Years of comprehensive onsite warranty for Modular UPS Systems including isolation Transformers b) Minimum 5 Years OEM (OEM of Battery) Warranty for Batteries	02 SETS	Complied	Complied	Complied	Complied	Complied
	Each set of UPS Frames comprising of:						
	1) Modular UPS Frame Scaled with power modules of minimum rating of 10kVA or higher configured for delivering a minimum output of 20kVA with N+N Redundancy along with necessary control Modules, Status and display system QTY-01 Set		Complied	Complied	Complied	Complied	Complied
	2) External or Internal Battery Management System (capable of monitoring individual battery, health status with in the battery bank) - QTY-01 Nos.		Complied	Complied	Complied	Complied	Complied

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	3) External output isolation transformer -40kVA QTY-01 Nos		Complied	Complied	Complied	Complied	Not Complied
	4) VRLA SMF BATTERY BANK (Quantity as per UPS Design requirements)-QTY-01 Set.		Complied	Complied	Complied	Complied	Not Complied
02	Laptop computer (HP/SONY/LENOVO/DELL)	01 Nos.	Complied	Complied	Complied	Complied	Complied
03	3 Years post warranty all inclusive onsite comprehensive AMC (For Item No. 01 Above)	Job	Complied	Complied	Complied	Complied	Complied

SPECIFICATIONS IN DETAIL FOR SITC & CAMC OF MODULAR UPS

SL. No.	Item & Required Specifications	COMPLIED/NOT COMPLIED				
		ECS Engineering Pvt. Ltd	Nikom InfraSolutions Pvt. Ltd.	Infonpower systems Pvt. Ltd.	BBN Energy systems Pvt. Ltd.	Infosoft digital design and Services Pvt. Ltd.
1	SITC OF MODULAR UPS					
a	UPS topology: On line, Double Conversion, VFI-SS-111	Complied	Complied	Complied	Complied	Complied
b	Technology Rectifier/ Booster/ Inverter: Using MOSFET/ IGBT devices	Complied	Complied	Complied	Complied	Complied
c	No. of UPS frames: 2 Frames	Complied	Complied	Complied	Complied	Complied
d	UPS Power Output : Minimum 20kVA per frame	Complied	Complied	Complied	Complied	Complied
e	UPS architecture:					
	i. Each UPS frame shall be modular, Scalable, based on redundant power modules	Complied	Complied	Complied	Complied	Complied
	ii. Each UPS frame shall be configured for delivering a minimum output of 20kVA with N+N redundancy.	Complied	Complied	Complied	Complied	Complied
	iii. Each UPS frames shall be scaled with power modules of minimum capacity of 10kVA or higher Example for scalability per frame. a. if scaled with modules of capacity $\geq 10\text{kVA}$ but less than 20kVA, Total 4 power modules in each frame with 2+2 module redundancy	Complied	Complied	Complied	Complied	Complied

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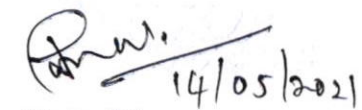
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	b. if scaled with modules of capacity $\geq 20\text{kVA}$, Total 2 power modules in each frame with 1+1 module redundancy (Refer attached SLD for UPS architecture)					
f	Parallel Load sharing mode between UPS frames: UPS frames shall be configured in Parallel Load sharing mode between them.	Complied	Complied	Complied	Complied	Complied
g	Local status and control: Available through LCD GUI based mimic panel user interface.	Complied	Complied	Complied	Complied	Complied
h	Battery Management system: Battery Management System for continuous monitoring of individual battery status for each frames	No data available	Complied	No data available	Complied	No data available
i	UPS Frame size: Each Frame should be able to accommodate all power modules and their controller units with caster wheel and minimum form factor. Empty spaces are to be covered with filler plates	Complied	Complied	Complied	Complied	Complied
j	Isolation Transformer: 2 Nos. of external isolation transformer at the output of UPS with minimum power rating of 40kVA each shall be mounted in a powder coated metallic cabinet and with caster wheels. Isolation Transformer winding shall be Copper and Soft start feature is required. (Refer attached SLD for output wiring)	Not Complied	Complied	Complied	Complied	No data available
k	Output wave form while running on mains and battery: Pure sinusoidal	Complied	Complied	Complied	Complied	Complied
l	AC to AC Conversion efficiency: 90% or more at full load	Complied	Complied	Complied	Complied	Complied
m	Inbuilt Power factor correction facility: Available	Complied	Complied	Complied	Complied	Complied
n	Static Bypass type: Static bypass with auto/manual bypass control	No data available	Complied	Complied	Complied	Complied


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o	Maintenance bypass arrangement: Available	No data available	Complied	Complied	Complied	Complied
p	UPS Control Mechanism: Separate controller unit for each power module along with the central controller for sub power modules	No data available	Complied	Complied	Complied	Complied
q	Hot swap ability of UPS Power Modules:					
	i. UPS Power Modules should be hot/safe swappable while UPS is in ONLINE mode. (Without switching OFF the UPS) It should be able to swap power modules between frames without making configuration changes on the modules/UPS	Complied	Complied	Complied	Complied	Complied
	ii. On withdrawal/ insertion/ failure of one or more UPS module, the offered system shall gracefully synchronize itself within 50ms.	Complied	Complied	Complied	Complied	Complied
r	Input Specifications					
	i. UPS frames shall be able to take input supply from different 3 Phase power feeder sources. Example: Frame-1 from Karnataka Electricity Board 3 Phase feeder line Frame-2 from MESCOM 3 Phase feeder line	Complied	Complied	Complied	Complied	Complied
	ii. Connection: 3 Phase, 3P + N + PE Connections	Complied	Complied	Complied	Complied	Complied
	iii. Phase: Three phase, 415 V +/- 15%	Complied	Complied	Complied	Complied	Complied
	iv. Frequency: 50 HZ +/- 10%	Complied	Complied	Complied	Complied	Complied
	v. Power factor: 0.99 typical at 100% load	Complied	Complied	Complied	Complied	Complied
	vi. In-built Surge Protection: UPS shall meet IEEE 587 Categories A & B (6kv) standards or higher for input surge protection.	Complied	Complied	Complied	Complied	No data available

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s	Output Specifications					
	i. Connection: 1 Phase: L+N+PE Connectors (Refer attached SLD for output wiring)	Complied	Complied	Complied	Complied	Complied
	ii) Output Voltage: Single phase 230 V +/- 1% for 100% load to be available at the output of Isolation Transformer	Complied	Complied	Complied	Complied	Complied
	iii) Output Frequency: 50Hz +/- 2%	Complied	Complied	Complied	Complied	Complied
	iv) Nominal Power : 20kW	Complied	Complied	Complied	Complied	Complied
	v) Power factor : ≥ 0.99	Complied	Complied	Complied	Complied	Complied
	vi) Frequency Tolerance : 50Hz +/- 2%	Complied	Complied	Complied	Complied	Complied
	vii) Current Crest factor: $\geq 3:1$ according to IEC EN 62040-3	Complied	Complied	Complied	Complied	Complied
	viii) Total Harmonic content : 2% maximum at 100% linear load, 5% maximum at 100% non-linear load.	Complied	Complied	Complied	Complied	Complied
t	ix) Overload Capacity: 10 Min 125 % load rate with no bypass intervention 60 Sec 150 % load rate with no bypass intervention	Complied	Complied	Complied	Complied	Complied
	Battery bank for each UPS Frame					
	i. Backup time: minimum 30 minutes with full 20kW load for each UPS frame	Complied	Complied	Complied	Complied	Complied
	ii. One battery bank per frame using Mono Block VRLA-SMF batteries	Complied	Complied	Complied	Complied	Not complied
	iii. Total VAH Capacity of each battery bank shall be minimum 24500 VAH	Complied	Complied	Complied	Complied	No data available
	iv. Capacity of individual battery in the battery bank: 12V, 65 AH Minimum., Type: C20	Complied	Complied	Complied	Complied	No data available
	v. Battery Cabinet: a. Each Backup battery bank should be housed in separate powder coated metal cabinet/Enclosure with caster wheels lockable. b. It should have the provisions for sufficient air ventilations and door openings for battery maintenance. c. It should meet relevant safety standards	No data available	Complied	Complied	Complied	No data available

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u	Batteries					
	i. Battery type: All the batteries in the UPS shall be of Advanced Glass Mat - Valve Regulated Sealed Lead Acid Battery in Construction (AGM - VRSLAB), in ABS Flame retardant (UL94V-O) grade meeting UL 2436 specifications - spill containment for Lead acid batteries	Complied	Complied	Complied	Complied	Complied
	ii. Make: Exide/Quanta/Rocket/Panasonic/CSB	Complied	Complied	Complied	Complied	No data available
	iii. All the batteries in the backup battery bank shall be of same voltage and ampere hour capacity.	Complied	Complied	Complied	Complied	No data available
	iv. Batteries shall be fresh and shall not have completed more than 3 months shelf life on the date of supply.	Complied	Complied	Complied	Complied	No data available
	v. All Battery used in the battery bank should be of the same Make, Model & Lot	Complied	Complied	Complied	Complied	No data available
	vi. All the reference tables regarding conductance, internal resistance, discharge voltage, capacity, etc. shall be supplied.	Complied	Complied	Complied	Complied	No data available
	vii. Batteries in battery bank shall be under warranty of Original Equipment Manufacturer (OEM) of the battery for Minimum 5 years. Warranty card issued by the OEM shall be submitted in this regard	Complied	Complied	Complied	Complied	No data available
v	Battery Charger Type: PWM Hi Efficiency, one in each power module	Complied	Complied	Complied	Complied	Complied
w	Communication Interface					
	i. Ethernet port for monitoring of UPS status	Complied	Complied	Complied	Complied	Complied
	ii. Provision for remote monitoring of UPS status through TCP/IP and GSM	Complied	Complied	Complied	Complied	Complied

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x	Environmental specs					
	i. Noise level @ 1m < 65 dBA	Complied	Complied	Complied	Complied	Complied
	ii. Working temperature range from 0°C to +40°C @95% RH	Complied	Complied	Complied	Complied	Complied
y	Provision of Control mechanism with appropriate indications to control UPS operation					
	i. Input ON/OFF, Output ON/OFF	Complied	Complied	Complied	Complied	Complied
	ii. Maintenance Bypass Switch should be available to isolate load from UPS.	No data available	Complied	No data available	Complied	Complied
	iii. Battery ON/OFF (Battery bank isolator)	Complied	Complied	Complied	Complied	Complied
	iv. Local status and control through LCD mimic panel user interface.	Complied	Complied	Complied	Complied	Complied
	v. Inbuilt Power factor correction facility	Complied	Complied	Complied	Complied	Complied
	vi. Provision for remote status display, diagnostics and control through SNMP	Complied	Complied	Complied	Complied	Complied
	vii. Audible alarms along with visual alarms on input/output/bypass failures and other warnings Local panel	Complied	Complied	Complied	Complied	Complied
	viii. 19" rack mountable remote panel for status and audible/visual alarms on input/output/bypass failures and other warnings, through Ethernet connectivity	No data available	Complied	No data available	Complied	No data available
	ix. Synchronization control circuits, connection control circuits, disconnection control circuits	Complied	Complied	Complied	Complied	Complied

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z	Monitoring and status display provisions					
	Input and Output status at local and remote locations	Complied	Complied	Complied	Complied	Complied
	Display of RMS current, Peak value current, RMS Voltage, Apparent Power, Active Power and Power factor.	Complied	Complied	Complied	Complied	Complied
	Internal temperature of individual power modules and ambient temperature.	Complied	Complied	Complied	Complied	Complied
aa	Battery Management system: Charging Current, Discharging Current, Display of Battery Operation time, Residue capacity, Battery voltage and date and time of last battery calibration	No data available	Complied	Complied	Complied	No data available
ab	Measurement and display provisions of historic data within the UPS Number of Bypass interventions, Number of thermal protection interventions with date and time, Number of battery commutations, Number of total discharges, Overall time of battery operation and overall time of mains operation	Complied	Complied	Complied	Complied	Complied
ac	UPS protection circuitry					
	i. Built-in protection against :					
	ii. Under voltage	Complied	Complied	Complied	Complied	Complied
	iii. Over voltage	Complied	Complied	Complied	Complied	Complied
	iv. Over load/ Over current	Complied	Complied	Complied	Complied	Complied
	v. Thermal protection	Complied	Complied	Complied	Complied	Complied
	vi. Deep battery discharge protection	Complied	Complied	Complied	Complied	Complied

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ad	Standards and Certifications for compliance: The offered UPS and its components shall comply with the relevant IEC/EN/UL/IS standards as mentioned below:					
	i. IEC 62040-1: General safety requirements for UPS (Valid third party Lab Certificate (CB Scheme)/Test report to be attached)	Not Complied	Complied	Not Complied	Complied	Complied
	ii. IEC 62040-2: Test standard for electromagnetic compatibility (EMC) for UPS systems. (Document of compliance from UPS OEM to be submitted)	Complied	Complied	Complied	Complied	Complied
	iii. IEC 62040-3: Performance and test requirements of UPS (Document of compliance from UPS OEM to be submitted)	Not complied	Complied	Complied	Complied	Complied
	iv. ISO 9001 Certification for manufacturing standards for the OEM of UPS. (Valid ISO 9001 Certificate to be attached)	Complied	Complied	Complied	Complied	Complied
	v. ISO 9001 Certification for manufacturing standards for the OEM of Isolation Transformers. (Valid ISO 9001 Certificate to be attached)	Complied	Complied	Not complied	Complied	No data available
	vi. JIS C-8702 certifications for Batteries with test reports from NABL/JIS accredited Labs. (Valid Lab Certificate/Test report to be attached)	Complied	Complied	Complied	Complied	No data available
	vii. Isolation Transformer shall comply with IS 2026 standards for power transformers. (Valid Third party Lab Certificate/Test report to be attached)	Not complied	Complied	No data available	Complied	No data available
ae	Warranty					
	i. Minimum 5 Years of comprehensive onsite warranty for UPS Systems including isolation Transformers	Complied	Complied	Complied	Complied	Complied
	ii. Minimum 5 Years OEM (OEM of Battery) Warranty for Batteries. (Refer attached onsite work schedule for UPS and Batteries on warranty period)	Complied	Complied	Complied	Complied	Complied
af	Time schedule for SITC work SITC shall be completed within 60 days from the date of issue of work order.	Complied	Complied	Complied	Complied	Complied

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ag	CAMC Requirement 3 years Comprehensive AMC after the 5 Years Warranty period (Refer attached CAMC work schedule)	Complied	Complied	Complied	Complied	Complied
2	LAPTOP COMPUTER					
i.	Processor: Intel core i5 8 th Gen Quad core, 2.3 GHz clock speed	Complied	Complied	Complied	Complied	Complied
ii.	Memory: 8GB DDR4 RAM	Complied	Complied	Complied	Complied	Complied
iii.	HDD: 128GB SSD + 1TB HDD	Complied	Complied	Complied	Complied	Complied
iv.	Graphics: 4GB NVIDIA Graphics card	Complied	Complied	Complied	Complied	Complied
v.	Screen: 15.6 inches, 1920x1080 pixels	Complied	Complied	Complied	Complied	Complied
vi.	OS: windows10 Professional	Complied	Complied	Complied	Complied	Complied
vii.	Make: HP/SONY/LENOVO/DELL	Complied	Complied	Complied	Complied	Complied
viii.	Warranty: Minimum 1 year or as offered by OEM whichever is higher	Complied	Complied	Complied	Complied	Complied
	QUALIFIED/NOT QUALIFIED	NOT QUALIFIED	QUALIFIED	NOT QUALIFIED	QUALIFIED	NOT QUALIFIED

No. of Technical bid opened: 5

No. of the Bids qualified: 2

Name of the Bidders qualified:

- 1) M/s. Nikom InfraSolutions Pvt. Ltd.
- 2) M/s. BBN Energy systems Pvt. Ltd.

On 22 May 14/05/2021

Jayaprakashan T V
DGM (CNS)

Signature Not Verified

Digitally signed by HARIDASAN EMBRAN T N
Date: 2021.05.20 14:45:40 IST
Location: EP Procurement System for Central PSUs
AGM (CNS)



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