

TENDER NOTICE No. 16/ 2021

CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F)

Sealed tenders are invited from the MSME registered firms / OEM having service infrastructure at Bhubaneswar for CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F) to ORSAC.

Cost of Tender Paper	:	Rs. 1000/-
Period of Issue of Tender Paper	:	14 . 12 .2021 to 27 . 12 .2021 (11AM to 4 PM)
Earnest Money Deposit	:	Rs.50,000/-
Last Date of Submission of Tender	:	28. 12 .2021 up to 1 P.M.
Opening of Technical Bid	:	29 . 12.2021 at 11.30 A.M.
Opening of Commercial Bid	:	30.12.2021 at 11.30 A.M.

ORSAC reserves the right to change the CAMC programme without assigning any reason thereof.

For details, please visit <http://www.odisha.gov.in> or <http://www.orsac.gov.in> or in the above office for the tender papers.

CHIEF EXECUTIVE, ORSAC

DOCUMENT CONTROL SHEET

Cost of Tender Paper	Rs.1000/-
Date of Issue of Tender Paper	14 . 12 .2021 TO 27 . 12 .2021
Earnest Money Deposit	Rs,50,000/-
Pre Bid Conference	22. 12.2021 at 11.30 AM (Conference hall of ORSAC)
Last Date of Submission of Tender	28 . 12 .2021 up to 1 PM
Opening of Technical Bid	29. 12 .2021 at 11.30 AM
Opening of Price Bid	30 . 12 .2021 at 11.30 PM
Place of Opening of Bids	ODISHA SPACE APPLICATIONS CENTRE (ORSAC) Dept. of Science & Technology, Govt. of Odisha Plot No.45/48(P), JayadevVihar, Near Gopabandhu Academy of Administration Unit-16, Bhubaneswar-751 023
Address of Communication	ODISHA SPACE APPLICATIONS CENTRE (ORSAC) Dept. of Science & Technology, Govt. of Odisha Plot No.45/48(P), JayadevVihar, Near Gopabandhu Academy of Administration Unit-16, Bhubaneswar-751 023 Tel:+91 674 2303625, Fax:+91 674 2300681 Email:orsac2012@gmail.com/orsac.od@nic.in Website: http://www.orsac.gov.in

ODISHA SPACE APPLICATIONS CENTRE (ORSAC)
Dept. of Science & Technology, Govt. of Odisha
Plot No.45/48(P), Jayadev Vihar, Near Gopabandhu Academy of Administration
Unit-16, Bhubaneswar-751 023

TENDER NOTICE NO.16 /2021

Sealed tenders are invited from MSME registered firms / OEM having local service office for CAMC of Addressable Fire Detection and Alarm System & Fire suppression system at Odisha Space Applications Center, Bhubaneswar.

Sl. No	Item Description	Quantity	Cost of tender paper (in Rs.)
1	CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F)	As per Annexure-B	Rs.1000/-

1. Non-transferable tender documents for CAMC of the item stated above will be available from office of the Odisha Space Applications Centre (ORSAC), Bhubaneswar on payment of tender document cost as specified above. The tender document cost, which is non-refundable, is payable in shape of crossed Demand Draft of any Nationalized Bank/Scheduled Bank payable at Bhubaneswar drawn in favour of Odisha Space Applications Centre, Bhubaneswar, Odisha. This tender notice can be accessed through Internet in the ORSAC website: <http://www.orsac.gov.in> or from Govt. of Odisha web site <http://www.odisha.gov.in> and bid document can be downloaded. The downloaded bid document can also be used provided it is accompanied with a crossed Demand Draft towards cost of the tender document. Tenderers interested to receive tender documents by Registered Post should pay additional amount of Rs.100/- (Rupees One hundred) only. However, ORSAC will not be responsible for postal delays in delivery of the documents.
2. The Tenderers are required to furnish attested copies of GST clearance certificate from the sales tax authority of the State of Odisha as applicable along with the tender.
3. The Tenderers are required to deposit Rs.50,000/- (Rupees Fifty thousand) only as Earnest Money Deposit (EMD) in shape of Bank Draft/Bank Guarantee issued by a Nationalized Bank payable at Bhubaneswar pledged in favour of Odisha Space Applications Center, Bhubaneswar.

Performance security shall be deducted from Bills as per guidelines given in the tender documents.
4. The items conforming to CAMC the tenderer has to quote the rates giving details of taxes, levies charges, premium etc. separately as stated in the tender document.
5. The tenders should be submitted after due compliance with guidelines given in the tender documents under Schedule (A) Conditions of Contract, Schedule (B & F)- Technical

specifications, Schedule(C)- CAMC place -Schedule (D)- Bid Form & Schedule (E)- Price Schedule Tenders submitted in incomplete form shall be rejected outright.

6. The filled in sealed tenders containing Technical Bid and Price Bid in double cover system as per instruction given in tender documents, shall be submitted in the Office of ORSAC, Bhubaneswar by Registered Post, Courier service or hand delivery. Tenders received after due date and time shall not be entertained.
7. A pre-bid conference will be held on 22 . 12.2021 at 11.30 AM to explain and clarify scope of work and various terms and conditions of the Tender to facilitate a clear understanding for prospective Bidders to enable them to participate in the Tender effectively.
8. The tender papers will be available for sale in the office of ORSAC between 11.00 AM to 4.00 PM on Odisha govt. official working days till 27. 12 .2021 The sealed tenders will be received till 1.00 PM on 28 . 12 .2021 in Office of the ORSAC. The technical bids will be opened on 29 .12 .2021 at 11.30 AM in presence of the Tenderers or their authorized representatives, if they so desire. The Price Bids of Technically qualified bidders will be opened in presence of the tenderers or their authorized representatives on 30.12.2021 at 11.30 A.M..
9. ORSAC reserves the right to cancel any or all tenders without assigning any reason thereof.

CHIEF EXECUTIVE

Schedule (A) – Conditions of contract for Tender No. 16 /2021

- 1) The Tender papers include instructions issued in the Tender notice along with the Schedule (A) - Conditions of Contract, Schedule (B & F) – Technical Specifications, Schedule (C) – CAMC Destination, Schedule (D) – Bid Form, Schedule (E) – Price Schedule.
- 2) The Tenderers shall submit the following documents and information with the tender. Lack of complete and adequate information under any of the parameter may render the bid disqualified.
 - a) For Technical Bid:
 - i) Copy of Tender Notice
 - ii) Acceptance of Schedule (A), Schedule (B & F).
 - iii) Documentary evidence that the tendered is the manufacturer or the authorized dealer of the OEM.
 - iv) Attested copies of Service Tax registration certificate and latest Service Tax Clearance Certificate issued by the competent authority.
 - v) Documents in support of CAMC service related to fire alarm etc. during last 5 years in different Govt. and public sector undertaking.
 - vi) Cost of Tender document (in shape of Bank Draft) if down loaded from Website and used.
 - vii) Earnest Money Deposit
 - viii) Income Tax return for last 3 years
 - ix) Attested copies of Audited Balance Sheet for last 3 years
 - x) Attested copy of PAN
 - xi) Documents regarding proof of local service office with address, contact no. and email id.
 - b) For Price Bid:
 - i) Acceptance of Schedule (C) CAMC destination
 - ii) Filled up Schedule (D) – Bid form
 - iii) Filled up Schedule (E) – Price Schedule
- 3) The firms can inspect the installation space of ORSAC Office Building during office hours in any working days in consultation with Electrical Engineering I/c before quoting. The quoted rates shall be for destination mentioned in the Schedule (C) CAMC cost should be inclusive of any spares to replace or repair, all taxes, duties, levies, charges, transportation cost, transit insurance cost. The item should be shown separately along with the basic rate. Prices written in words shall be accepted in case of any discrepancy. Rates with conditionality or provision of escalation will be rejected.
- 4) Validity of period of the Tender shall be six months from the date of opening of the price bid.
- 5) The Earnest Money Deposit shall be submitted in shape of Bank Draft or Bank Guarantee issued by any Nationalized Bank having branch at Bhubaneswar. The Bank Draft or Bank Guarantee should be pledged in favour of Odisha Space Applications Center, Bhubaneswar for a period of 60 days beyond the period of validity of the tender counted from date of opening of the price bid.

- 6) All complains related to CAMC should be resolved immediately on the same day, but the preventive maintenance will be done by vender fortnightly.
- 7) The spare if required to replace in the Panel and accessories should be new and genuine.
- 8) If any service fails to satisfy the agreement will be cancelled with one month notice,
- 9) The Tenderer has to start the CAMC service within 5 days of issue of Purchase Order.
- 10) If the tendered fails to start the CAMC service within prescribed time period it shall be treated as breach of contract. This EMD will be forfeited and the supply order will be cancelled for which the tendered shall remain fully responsible without any liability of ORSAC.
- 11) Tenders are to be submitted in double cover system. The 1st sealed envelope shall contain the Technical Bid and the 2nd sealed envelope shall contain the Price Bid. Both the 1st and 2nd sealed envelopes are then to be put inside a 3rd envelope and sealed. On the 1st sealed cover it shall be written “Technical Bid for CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F) ” of Tender No. 16 /2021. On the 2nd sealed cover it shall be written “Price Bid for CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F).” Tender No. 16 /2021. On the 3rd cover (containing the 1st and 2nd envelope) it shall be written,” Tender for CAMC of Addressable Fire Detection and Alarm System & Fire suppression system (As per Annexure-B & F) .” From and to addresses shall be written on each of the envelopes.
- 12) Submission of sealed tenders shall be by Registered Post, Courier Service or hand delivery. ORSAC shall not be responsible for postal or courier service delays or missing of the documents during transit. Tenders reaching late (as per time mentioned in the Tender Notice) shall not be considered by ORSAC.
- 13) Intimation regarding their selection in Technical Bid may be sent to Tenderers on request through Post/e-mail. Purchase order shall also be sent to the successful Tenderer by Post after evaluation of Price Bid. Tenderers are to furnish their Telephone No./ e-mail along with the correct postal address. The tenderers must have service office with service engineer / technician in Bhubaneswar positively to attend the complain immediately.
- 14) Bidding Documents should be submitted with an index with page of the documents.

15.1 **Pre-Bid Conference:**

A pre-bid conference will be held on 22 . 12 .2021 at 11.30 AM to explain and clarify scope of work and various terms and conditions of the Tender to facilitate a clear understanding for prospective Bidders to enable them to participate in the Tender effectively.

16) Amendment of Bidding Documents:

- 16.1 At any time before the deadline for submission of bids, the Chief Executive, ORSAC may, for any reason, whether at own initiative or in response to a clarification requested by a prospective Bidder, modify the bidding document by amendment.

- 16.2 All prospective Bidders who have received the bidding document shall be notified of the amendment in writing by e-mail and / or post, and all such amendments shall be binding on them. The amended bid document shall also be kept on the website (Odisha Government Portal).
- 16.3 If required, in order to allow prospective Bidder reasonable time to take the amendment into account in preparing their bids, the Chief Executive, ORSAC reserves the rights to extend the deadline for the submission of bids.
- 17) The Chief Executive, ORSAC or his representative can have negotiation with the L1 vendor or any matter relating to CAMC.
- 18) Terms of Payment: Payment to the successful tenderer shall be made only after end of each quarter along with required relevant documents such as fortnightly maintenance reports submitted to ORSAC in support of Bills. 90% of the bill amount will be released after successful CAMC service & 10% of the Bill amount will be retained towards "Performance Security". This amount can be released on submission of Bank Guarantee for equal amount issued by any Nationalized Bank at Bhubaneswar, which will remain valid till three month beyond the Guarantee period.
- 19) The tendered shall not raise any claim in any manner after the Bill amounts are cleared against the purchase order.
- 20) The quantity tendered can be decreased/increased/dropped as per the requirements at the time of placing of order.
- 21) In case of any dispute between the Tenderers and ORSAC regarding interpretation of Tender document conditions, the decision of the Chief Executive, ORSAC shall be final and binding.
- 22) Jurisdiction of Court – Civil Suits, if any, arising out of the contract shall have to be filed at Bhubaneswar under Khurda district. Writ petitions, Civil & Criminal, shall be filed in the High Court of Odisha, Cuttack.

Accepted the above conditions under schedule (A) of tender.

(Signature of Tenderer)

Name:

Address:

SCHEDULE- “ B “ TENDER NO. 16 /2021 ORSAC

TECHNICAL SPECIFICATION OF FIRE ADDRESSABLE SYSTEM WITH ACCESSORIES

SL. NO.	DESCRIPTION	QTY	G. FLOOR	F. FLOOR	TOTAL QUANTITY
1.	Networkable Microprocessor based analogue addressable type I Loop Fire Alarm Control Panel with 80 character LCD display, Full qwerty keypad. The panel should be equipped with sufficient numbers of loops with 20 % Spare capacity in each loop. The panel shall be capable of taking at least 300 analog addressable devices (150 Detectors & 150 Devices) in loop. The panel 240 volts AC power supply, automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 30 min during an emergency conditions as required. (UL listed & FM approved).	No.	1	0	1
2	Supply, installation, Testing & Commissioning of Network Repeater Panel with minimum 640-characters; The LCD shall Display all events / detectors, devices status of complete systems in the network, The NRP shall be equipped with Keypad. Provision for mounting enunciator box and blanking modules shall be provided in the NRP, complete with battery, battery charger and other accessories as per Main Fire Alarm Panel as per specifications	No.	1	1	2
3	Addressable Type Ionization Smoke Detector with Base & Accessories.	No.	63	48	111
4	Addressable Type Heat Detector with Base & Accessories.	No	0	1	1
5	Addressable Type Manual Call Point with Accessories.	No	5	6	11
6	Audio Visual Strobe +control module	No	8	8	16
7	2cX 1.5 Sqmm.PVC Insulated Copper Conductor	Mtr			1600
8	PVC Conduit With all accessories				
a	25mm	Mtrs			560
b	32mm	Mtrs			880
9	Isolator base/Module	Nos	3	2	5
10	Response Indicator	Nos	15	5	20
11	Exit Glow Lights with 3 hr. Battery Backup.	Nos	2	1	3
12	Exit Sign Board Of Standard Size.	Nos	10	0	10

FIRE SUPPRESSION SYSTEM

A. SERVER ROOM TFS - 1134					
SL. NO.	DESCRIPTION	QTY	G. FLOOR	F. FLOOR	TOTAL QUANTITY
1.	Novec 1230, CCOE Approved 120 .0 Ltrs. Cylinder working at 34.5 bar pressure & Valve Assembly and arrangement for Supervisory Switch connection for monitoring cylinder pressure, a pressure gauge with a safety burst disc and safety cap	No	1	0	1
2	Novec 1230 manufactured by 3M, with Zero Ozone Depletion Potential and Very Low Global Warming Potential of 1 with 20	Kg	86		FILLED 86 Kg
3	Centralised Master Cylinder Kit Comprising Below Items:	Set	1	0	1
a	Pr. Gauge + Low Pr. Supervisory Switch - 1 Nos.				
b	Electromagnetic Actuator - 1 Nos.				
c	Manual Actuator - 1 Nos.				
d	Pneumatic Actuator - 1 Nos.				
e	Flexible Discharge Hose - 1 Nos.				
f	Flexible Actuation Hose - 2 Nos.				
g	Tee - 1 Nos.				
h	Elbow - 1 Nos.				
i	Warning Sign Board - 1 Set.				
4	Check Valve	No	1	0	1
5	Nozzles	No	2	0	2
6	Wall Mount Cylinder Bracket	No	1	0	1
7	Discharge Pressure Switch	No	1	0	1
8	Seamless Schedule 40 pipe	Lot	1	0	1

B. GAS RELEASE SYSTEM

SL. NO.	DESCRIPTION OF ITEMS	QTY	G. FLOOR	F. FLOOR	TOTAL QTY
1	Supplying, of Gas release panel with 2 zone fire detection and 1 zone gas discharge module and potential free contact to relay 'Gas Discharge' signal to main Panel.	No	1	0	1
2	Supplying of Hooter cum strobe	No	1	0	1
3	Supplying of Manual Abort Switch	No	1	0	1
4	Supplying of Manual Release station	No	1	0	1
5	Supply & laying of 2c 1.5 sq mm FRLS, copper conductor armored cable complete with all accessories as required.	Mtrs	48		48
a	3.0 LB capacity Novec 1230, OLP Assembly with automatic valve,	No	8	0	8
b	7.0 LB capacity Novec 1230, OLP Assembly with automatic valve,	No	3	0	3

c	Linear pneumatic heat Detection Tube with all necessary fittings &	Mtrs	133	0	133
d	Master Control Unit with Audio Visual Alarm with wiring to make	No	11	0	11

**FIRE FIGHTING
PUMPS & ACCESSORIES**

SL. NO.	DESCRIPTION OF ITEM	QTY	G. FLOOR	F. FLOOR	TOTAL QTY
1.1	Supply, installation, testing and commissioning of terrace Fire Booster pump comprising of the following:	No			1
	Horizontal mono-block centrifugal pump with remote switch, suitable for operation on 415 volts± 6%, 3 phase, 50 HZ A.C supply.				
	The pump casing shall be CI, shaft shall be CS & impeller / shaft sleeve / casing wearing ring shall be bronze and with Mechanical seal. The system shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side, electrical control panels fabricated from 14-gauge CRCA sheet volt meter ammeter with selector switch, suitable breaker (TP), 5 VA CL: CTs, phase indicating lamps protected by 2-amp SP MCB, Star Delta starter, necessary wiring, cable alleys, earthlings (The pump should meet the condition and shall be gotten approved by the Local fire Authority).				
	Squirrel cage induction motor TEFC type for operation on 415 V, 3 phase 50 HZ AC supply for the above pump with speed of 2900 R.P.M.				
	Suitable cement concrete foundation with plaster, (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with Anti vibration arrangement of cushy foot mounting for pump defined above & of duty as follows: Flow: 900 LPM, Head: 40 Mtrs	Set			1
1.2	Suitable reinforced cement concrete pump foundation duly plastered with anti-vibration pads.	Set			1
1.3	Supplying, testing, installation & commissioning of pressure switches for Fire Pumps	Set			2
1.4	Supplying, testing, installation & commissioning of pressure gauges with mini ball valve and siphon tube.	Set			8

B. ELECTRICAL WORKS

SL. NO,	DESCRIPTION OF ITEMS	QTY	G. FLOOR	F. FLOOR	TOTAL QTY
2.1	Terrace Fire Booster Pump Panel:				
	1 No. suitable rated 50 KA, TP, MPCB without inbuilt 0/L relay & with 1NO + 1NC auxiliary contacts & 'ON' indication lamp 110V (LED Type) for Terrace Fire Booster Pump Panel for 15 HP. Suitable cast resin CT's for metering on each phase of Class-1 accuracy & of suitable burden & ratio. Digital ammeter with inbuilt selector switch.				
	Fire pump panel to be complete with all control wiring / terminals for linkage with flow switches / pressure sensor for auto operation of pumps and as per the requirement of Local Govt. Fire Officer.				
	Fire Pump Panel as described above.	Set			1
2.2	Supplying and fixing of one number PVC insulated and PVC sheeted aluminum conductor cable of 1.1 KV grade of size on surface as required complete with end terminations of aluminum lugs and brass compression glands.				
2.2.1	95 x 4 core	Mtr			50
2.2.2	16 x 4 core	Mtr			75
2.3	Providing and laying 2 x 1.5 sq mm PVC insulated and sheathed copper conductor armored cable for connecting between Pressure Switches to Panel including fixing to walls and columns by GI saddles and steel screws, and fixing by PVC ties and straps and end terminations with aluminum lugs and brass compression glands complete as required. All supports shall be at least 0.5 M intervals. Thimbles and ferrules shall be provided at joints and terminations.	Mtr			100
2.4	Fabricating and installing following sizes of perforated MS cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with MS suspenders and including painting etc. as required.				
2.4.1	225 mm width x 50 mm depth x 1.6 mm thickness	Mtr			100

C. PIPING AND ACCESSORIES (HYDRANT SYSTEM)

SL. NO.	DESCRIPTION OF ITEM	QTY	G. FLOOR	F. FLOOR	TOTAL QTY
3.1	Providing, laying, testing and commissioning of Class "C" heavy duty MS pipe conforming to IS:1239 / 3589 including fittings like elbows, tees, flanges, tapers, nuts, bolts, gaskets etc., fixing the pipe on pipe on the wall / ceiling with suitable clamps and painting with two or more coats of synthetic paint of required shade complete as required.				
3.1.1	150 mm dia	Mtr			120
3.1.2	100 mm dia	Mtr			72
3.1.3	80 mm dia	Mtr			24
3.1.4	25 mm dia	Mtr			12
3.2	Supplying and fixing single headed internal hydrant valve with instantaneous stainless-steel couplings of 63 mm dia with cast iron wheel, ISI marked conforming to IS:5290 (Type A) with blank cap and chain as required.	No			8
3.3	Supplying and fixing 63 mm dia, 15 M long synthetic hose pipe with 63 mm dia male and female stainless-steel couplings duly binded with GI wire, rivets etc conforming to IS:636 (Type A) as required.	No			14
3.4	Supplying and fixing 63 mm dia stainless steel branch pipe with 20 mm (nominal internal diameter) size gun metal conforming to IS:903, suitable for instantaneous connection to interconnect hose pipe coupling as required.	No			7
3.5	Supplying and fixing First Aid Hose Reel with MS construction spray painted in Post Office Red, conforming to IS:884 with up to date amendments, complete with the following as required:	Set			7
a	36 m long 25 mm (nominal internal) dia water hose Thermoplastic (Textile reinforced) Type 2 as per IS:12585.				
b	25 mm (nominal internal) dia gun metal globe valve and nozzle.				
c	Drum and brackets for fixing the equipment's on wall.				
d	Connections from Riser with 25 mm dia stop valve (gun metal) & MS pipe.				
3.6	Supplying and fixing of hose cabinet of size 750 mm x 600 mm x 500 mm made of 3 mm thick powder coated aluminum sheet with 5 mm thick glazed glass doors including necessary locking arrangement suitable to accommodate external hydrants, 2 nos 15 m long hose pipe, 1 no branch pipe with 4 nos MS angle (40 x 40 x 8) supports grouted in floor and duly powder coated with post office red external and white internal paint complete in all respects, for external hydrant, as required .	No			7

3.7	Providing & fixing, testing and commissioning of double flanged sluice valve of rating PN 1.6 with RISING spindle, bronze/ gun metal seat, IS marked complete with nuts, bolts, washers, gaskets, conforming to IS:780 of following sizes as required:				
3.7.1	100 mm dia	No			2
3.7.2	100 mm dia	No			1
3.8	Providing, installation, testing and commissioning of gun metal valves of following sizes as required:				
3.8.1	50 mm dia	No			2
3.9	Providing Installation, testing and commissioning of non-return of following sizes confirming to IS:5312 complete with rubber gaskets, GI bolts, nuts, washers etc as required.				
3.9.1	100 mm dia	No			2
3.10	Supplying, installing and commissioning C.I. flanged "Y" type Strainer with SS mesh. suitable flanges, nuts, bolts, gaskets etc. complete.				
	100mm dia.	No			1
3.11	Supplying and fixing air vessel made of 250 mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve, with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	Set			1

D. FIRE EXTINGUISHERS

SL.NO.	DESCRIPTION OF ITEMS	QTY	G. FLOOR	F. FLOOR	TOTAL QTY
	Providing and fixing Carbon-dioxide fire extinguishers consisting of welded M.S cylindrical body, squeeze lever discharge valve fitted with internal discharge tube, 30cms long ISI marked high pressure discharge hose, discharge nozzle, suspension bracket, confirming to IS : 934 finished externally with red enamel paint and fixed to wall with brackets with raw plug/dash fasteners complete with internal charge fasteners complete with internal charge.				
	Capacity 4.5kg. LS.I. Marked. (IS : 15683:2006)	No			8
	Clean Agent (Stored Pressure) type Fire Extinguisher duly filled with HFC-236(UL Approved) Hexaflouropropane complete in all respect				
	Capacity 4kg. I.S.I. Marked. (IS : 15683:2006)	No			12
	Providing & fixing wall mounted signages	No			NIL

	<p>consisting of Zinc Sulphide Photo Luminescent coatings on acrylic sheet. Signages shall be 15 cm x 30 cm and shall consist of Signage on half side and arrow on other half. Signage shall be any of the following: Exit / Staircase I Extinguisher location / Manual Call Box I Hydrant etc. Signage shall be as per drawing</p>				
	<p>Providing & fixing wall mounted Floor Plan Signages for emergency egress consisting of Building Floor Plan screen painted on Zinc Sulphide Photo Luminescent coatings on acrylic sheet. Signages shall be 40 cm x 40 cm and shall consist of Floor Plan with location of staircases / exits and arrow markings indicating escape paths.</p>	<p>No (EXIT BOARD ONLY)</p>			<p>3</p>

Accepted the above-mentioned conditions under schedule-B of the tender for CAMC.

Signature of Tenderer

Name:

Address:

SCHEDULE "C" CAMC DESTINATION FOR TENDER NO.16/2021 ORSAC

Sl. No	Item	Qty.	Delivery Destination/Consignee
			<p>ODISHA SPACE APPLICATIONS CENTRE (ORSAC)</p> <p>Dept. of Science & Technology, Govt. of Odisha, Plot No.45/48(P), Jayadev Vihar, Near Gopabandhu Academy of Administration Unit-16, Bhubaneswar-751 023</p>

Accepted the above-mentioned conditions under schedule (C) of the tender for our CAMC service.

Signature of Tenderer

Name:

Address:

SCHEDULE (D) – Bid Form of Tender Notice No. 16/2021

To

The Chief Executive
Odisha Space Applications Centre
Bhubaneswar

Sir,

I/ we have gone through the Tender Notice No..... of Odisha Space Applications Centre (ORSAC) and the schedule (A), (B), (C), (D)), (E) and (F) of Tender document.

A sum of Rs...../- (Rupees thirty thousand) only is hereby tendered in shape of _____ duly pledged as Earnest Money Deposit (EMD) towards tendered value.

I/ We agree the ORSAC shall be at liberty to forfeit the EMD and performance security as per conditions of the contract in case of defaults on my/ our part in fulfilling contractual obligations.

I/We have gone through all terms and conditions stated in the Tender documents and agree to all the terms and conditions.

Date:

(Signature of Tenderer)

Name:

Address:

Schedule (E) – Price Schedule for Tender Notice No. 16/2021 ORSAC

Description	Service for which rate is quoted	Item wise description (mention as per Tender Notice)	CAMC Destination (as per Schedule-C)	Price for each unit (mention in figures and words)				Total price in Rs. (mention in figures and words)
				CAMC service charge (in Rs.)	Taxes (Mention each tax separately) in Rs.	Other charges (mention each separately) in Rs.	Total unit price in Rs.	
1	2	3	4	5	6	7	8	9

Grand Total :Rs.

(Signature of Tenderer)
Name:

Address:

SCHEDULE “ F “ Detail Specification for Novec 1230 Total Room Flooding System

E. GAS SUPPRESSION SYSTEM FOR FK - 5 - 1 – 12

1. SCOPE OF TENDER

Fire suppression system is fire detection and quenching system. This is for flooding entire room with Novec 1230. The gas refilled if required at the cost of tenderer.

2. SYSTEM DETAILS

- a. The amount of FK-5-1-12 is required to obtain a uniform (minimum) design concentration Class 4.7% required to extinguish the fire at minimum anticipated temperature with the risk and as required by NFPA 2001, 2012 Edition with a hold time for 10 minutes. The system design shall not exceed 10% for normally occupied areas, adjusted for maximum area temperature anticipated with provision for room evacuation before agent release. This has to maintain by the tenderer.
- b. Necessary warning signs shall be displayed in and near such risk (entry and exit) envisaged for clean agent Gas suppression.
- c. The Pipe replaced if required should be MS, ASTM Schedule 40.
- d. The Cylinder to be pressurized at 34.5 Bar and Cylinder Valve Assembly must be UL/FM Listed in case of refilling if required. This has to maintain by tenderer.
- e. Each cylinder have pressure gauge and low pressure switch to provide visual and electrical supervision of the cylinder pressure. The low pressure switch shall be wired to the control panel to provide audible and visual trouble alarm in the event of drop of pressure at 20 Bars and below. The pressure gauge shall be color coded to provide an easy, visual indication of cylinder pressure. This has to maintain by the tenderer.
- f. The cylinder shall have pressure relief provisions that automatically operate before the internal nominal pressure exceeds 60 Bars. This has to maintain by the tenderer.

g. Extinguishing Agent:

FK-5-12 (Dodecafluoro-2-Methylpentan-3 One – CF₂CF₂C(I)CF(CF₃)₂). The Agent shall not contain any Hydrofluorocarbons (HFC).

The manufacture of Agent FK – 5 – 12 should give a 20 year of warrantee against any regulatory bans from Environment agency.

The Agent must be UL/FM approved.

h. Comply with requirements of the authorities having jurisdiction.

i. Filling facility should be UL Listed / PESO approved.

j. Design Criteria

1. Standard Code : NFPA-2001 (Latest Addition)
2. Temperature of Risk : 20°C to 27°C
3. Design Concentration : 4.7%
4. Flooding Factor : As per Manufacturer
5. Discharge Time : 10 Seconds
6. Design Pressure : Upstream of pressure reducer 34.5 Bars
7. Design Pressure : Downstream of pressure reducer as per calculation
8. Cylinder Capacity : 34 Ltr., 80 Ltr., 120 Ltr., 150 Ltr.
9. Nozzle Type : 360° / 180°C
10. Altitude correction factor : As per Manufacturer
11. Hold Period : 10 Minutes

3. TO BE SUBMITTED BY VENDOR

The Vendor must do the CAMC service twice in each month and has to submit the report item wise.

4. Sequence of Operation

- a) Activation of the First Smoke Detector (the crossed-zoned laser detector)
 - i) Illuminate the respective circuit lamp on the control unit.
 - ii) Energize a pre-alarm audible alarm bell.
 - iii) Treatment remote alarm to the building Fire Alarm Panel.
 - iv) Activation of the Second Smoke Detector (the cross-zoned laser detector).
 - v) Illuminate the respective circuit lamp on the control unit.
 - vi) Energize an evacuation audible alarm horn device.
 - vii) Shut down the stand-alone air conditioning units serving the protecting area.
 - viii) Closes the supply and exhaust / return dampers serving the protected area.
 - ix) Activates a time delay mechanism which delays release of the clean agent for up to 20 seconds from the time the 2nd loop is activated. The Fire Suppression clean agent is released at the end of the time delay interval unless a “dead man” type abort switch is operated between the 1st and 2nd detection loops. A timed out system discharges upon abort disengagement unless the system is cleared and reset.
- b) Discharge of the Fire Suppression Clean Agent.
 - i) Operates strobe light outside the protected area.

- ii) The system may be activated by manual discharge switches located in the protected area. Operation of a manual discharge switch causes immediate discharge of the fire suppression agent and causes alarm and shut-down devices to operate the same as if the system had operated automatically operation of a manual discharge switch overrides all time delay and abort system devices in the system.

DETAIL SPECIFICATIONS OF NOVEC 1230 AGENT BASED ELECTRICAL PANEL & SERVER RACK FLOODING SYSTEM.

1. SCOPE

- a. The scope covers maintain and refill if required for the Automatic Novec 1230 Clean Agent Flooding System complete for electrical panels with Linear Pneumatic Heat Sensing tube, cylinder, valves, integration with Main Fire Alarm Control Panel for status monitoring etc. The work to be executed by experienced and specialized company dealing in Clean agent Linear Pneumatic Heat Sensing tube System shall cover:
 - i. Providing Direct Panel Clean Agent Gas (Novec 1230) Flooding System with Linear Pneumatic Heat Sensing tube inside the panels.
 - ii. Audio-visual annunciation devices for indicating incidence of fire has also to maintain.
- b. The electrical panel fire suppression system shall be complete with Direct Release Clean agent storage cylinders for required capacities, extinguishing agent as specified, Linear Pneumatic Heat Sensing tube, filling and end-of-line adaptors, pressure switches, control equipment and all necessary accessories and push in fittings to form a complete and working installation to protect the Electrical panel in case of fire. The panels to be protected shall be determined as per the approval of the engineer-in-charge. The system will have an interface with Main Fire Alarm and Control Panel. In case of fire in the concerned Panel, indication of Linear Pneumatic Heat Sensing System discharge status should come in Main Fire Alarm and Control Panel. This has to maintain by the tenderer.
- c. Clean Agent should be used with below mentioned properties
 - i. The Clean Agent should have Zero Ozone Depletion Potential. (ODP = 0)
 - ii. The Clean Agent should be a low pressure agent.
 - iii. The Clean Agent should be UL /FM approved

2. SYSTEM DESCRIPTION

- a. Each Novec 1230 Clean Agent extinguishing unit, when installed, is a self-contained system, meaning that it is equipped with its own automatic (non-electric) detection system, which when actuated, automatically releases the suppression agent into the Electric panel.
- b. The Novec 1230 Clean Agent Automatic Direct System consists of the following major components:
 - i. Clean Agent Cylinder/Valve Assembly.
 - ii. Cylinder Mounting Bracket.
 - iii. Linear Pneumatic Heat Detector, Actuation and Discharge Tubing and Fittings (Red Colour, 6 mm OD, 4mm ID).
 - iv. Pressure Switch
 - v. End of Line Adapter with Pressure Gauge.
 - vi. Push in Tube Fittings.
 - vii. Audio Visual Alarm
- c. The Novec 1230 Clean Agent Automatic Direct System utilizes unique Linear Pneumatic Heat Sensing flexible tubing that is attached to the top of the cylinder valve. This Linear Pneumatic Heat Sensing tube is pressurized with dry nitrogen is temperature sensitive and acts as a continuous

- linear thermal detector that ruptures upon Flame impingement when the Temperature reaches 100 degree Centigrade – 120 degree Centigrade . Once the detector tubing is ruptured forming a nozzle at the rupture point, it allows the Clean Agent to flow through, distributing the extinguishing agent into the protected area. Upon system actuation, the pressure switch can be used to indicate system discharge, shutdown ventilation, shut-off electrical power etc may be required.
- d. The Novec 1230 Clean Agent Automatic Direct System is designed and listed as an Automatic unit. No manual or electric means is provided for simultaneous actuation of multiple systems.
 - e. The Novec 1230 Clean Agent is stored in steel cylinders as a liquefied compressed gas, super-pressurized with Dry Nitrogen to 13.5 Kg/cm². The ambient operating temperature range for all system components is (0 degree Centigrade to 54.4 degree Centigrade).
 - f. Each container is equipped with a Stainless Steel / nickel-plated brass valve, a pressure gauge to monitor container pressure, and a quarter-turn ball valve that interfaces with the Linear Pneumatic Heat Sensing tube. The ball valve must be kept closed at all times when the container is not in service.
 - g. A wall-mounted painted steel bracket is used to mount the container/valve assembly in a vertical (upright) position.
 - h. For the direct Novec Clean Agent systems, the tubing performs three functions: Heat Detection, System Activation, and Clean Agent discharge. The tubing is installed throughout the Electrical Panel volume, with one end connected to the top of the Clean Agent container valve. The tubing is pressurized with Dry Nitrogen to 13.5 Kg/cm² and maintains the system in the “OFF” position.
 - i. A pressure switch is connected at the Valve to monitor system pressure, system actuation and/or to energize deenergize electrically operated equipment. Manufacturer recommends that all systems use a pressure switch coupled with some other devices To alert personnel in the event of a system discharge
 - j. The system should have means to close the exhaust fans if installed in the panel at the time of system activation.
 - k. As desired by the engineer-in-charge the main supply of panel can be shut off with the system.
 - l. The Detection Tubing should be red in colour, have outer diameter not less than 6 mm.
 - m. The Detection Tube should burst at Temperature of 100 degree Centigrade to 120 degree Centigrade
 - n. The cylinders(without valve) should be tested in accordance with DOT

3. FILLING STATION:

- a. Filling station must be in India & shall be UL approved.