

## REQUEST FOR PROPOSAL



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Selection of Service Provider for  
Extension of Data Centre at IT Centre,  
Odisha Secretariat with Supply of  
Modular Integrated Smart Rack Solution,  
AMC of existing Server Farm Enclosure &  
Operational Support for both Setups

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**RFP No.: OCAC-SEGP- OCAC-SEGP-INFRA-0011-  
2017-24056**



Volume II	Scope of Work
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ODISHA COMPUTER APPLICATION CENTRE

## Table of Contents

<b>1.</b>	<b>Introduction .....</b>	<b>3</b>
<b>2.</b>	<b>Scope of Work.....</b>	<b>3</b>
2.1.	<b>Layout and Design Plan for New Rack Enclosure .....</b>	<b>4</b>
2.2.	<b>Site Preparation.....</b>	<b>6</b>
2.2.1.	<i>Civil &amp; Interior work.....</i>	<i>6</i>
2.2.2.	<i>Electrical work and lighting.....</i>	<i>6</i>
2.2.3.	<i>Air Conditioning.....</i>	<i>8</i>
2.2.4.	<i>Temperature and humidity .....</i>	<i>8</i>
2.2.5.	<i>Installation of Fire Detection and Control System.....</i>	<i>8</i>
2.2.6.	<i>Installation of CCTV Surveillance systems.....</i>	<i>8</i>
2.2.7.	<i>Installation of Access Control System .....</i>	<i>8</i>
2.2.8.	<i>Rodent repellent .....</i>	<i>9</i>
2.2.9.	<i>Other Technical Specifications .....</i>	<i>9</i>
2.3.	<b>Acceptance Testing and Commissioning of the Extension .....</b>	<b>9</b>
2.4.	<b>Operation &amp; Maintenance of Existing Server Firm and the New Setup.....</b>	<b>10</b>
2.5.	<b>Vendor Management.....</b>	<b>10</b>
2.6.	<b>Physical Infrastructure Management and Maintenance Services .....</b>	<b>11</b>
2.7.	<b>Bill of Material for the Existing Server Firm &amp; its Operation Centre .....</b>	<b>11</b>
2.8.	<b>Present Server Firm setup details.....</b>	<b>13</b>
2.9.	<b>Bill of Material for the New Data Centre solution.....</b>	<b>14</b>
<b>3.</b>	<b>General.....</b>	<b>16</b>
3.1.	<b>Site Visit .....</b>	<b>16</b>
3.2.	<b>Rights of Access to Information .....</b>	<b>16</b>
3.3.	<b>Exit Plan .....</b>	<b>16</b>
3.4.	<b>Jurisdiction of Courts .....</b>	<b>16</b>
3.5.	<b>IT Act 2000 &amp; ITAA (2008) .....</b>	<b>16</b>
<b>4.</b>	<b>Expected Project Timeline.....</b>	<b>17</b>
<b>5.</b>	<b>Payment Terms.....</b>	<b>18</b>
<b>6.</b>	<b>Service Level &amp; Penalty.....</b>	<b>19</b>
6.1.	<b>SLA Objectives.....</b>	<b>19</b>
6.2.	<b>SLA Duration.....</b>	<b>19</b>
6.3.	<b>SLA Matrix .....</b>	<b>19</b>
6.4.	<b>Planned Down Time:.....</b>	<b>19</b>
6.5.	<b>SLA Severity Levels Defined.....</b>	<b>19</b>

<b>6.6. SLA Down Time calculation for equipments of different severity levels .....</b>	<b>20</b>
<b>6.7. SLA Manpower Requirements .....</b>	<b>20</b>
A. Penalty for non-achievement of Service Level Requirements.....	21
B. Penalty on non-availability of manpower resources.....	21

## 1. Introduction

The Data Centre established at IT Centre, Odisha Secretariat for providing IT related services to different Government Departments services shall be extended to meet the future upgradation requirements.

As part of this extension, a new modular smart Server firm enclosure shall be established to accommodate additional IT infrastructure including preparation of site, fixing of required electrical and other fixtures. The existing Server Firm housing the critical infrastructure for projects like OSWAS, SAMS, Video KYC, eDespatch, SOCS, shall also be put under AMC service to ensure uptime of the project infrastructure.

The existing Server Firm and the extended Data Centre facilities shall be monitored through the Server Farm Operation Centre Functioning at IT Centre with upgradation of BMS Software, as required, during the entire period of service to be offered by the selected Service Provider.

OCAC intends to engage a Service provider for providing the above services till 31<sup>st</sup> December, 2029.

## 2. Scope of Work

- a. The selected bidder shall inspect the site and prepare a design diagram of the room where the new Server Farm enclosure shall be installed. The design should be optimal and economical and accommodate as many server racks in the portable enclosure.
- b. The bidder shall install 3 numbers of server racks (42 U) and 2 numbers of network racks within the enclosure besides other components.
- c. The selected bidder shall supply and delivery of all components for intelligent integrated/inbuilt Smart Rack infrastructure and shall be responsible for unloading, handling, proper storage at site, erection, testing and commissioning at site of complete infrastructure for the proposed extension of Data Centre complete with all accessories required for efficient and trouble-free operations.
- d. The selected bidder would be required to undertake all the necessary civil & interiors, electrical, plumbing and mechanical works including false ceiling/flooring, partitioning (if required), installation of electrical component, cable laying etc. and other infrastructure or services to create the desired Physical Infrastructure.
- e. Bidder shall install and configure / integrate every component and subsystem component, required for functioning of the new Server Farm and its monitoring from the existing Operation Centre. All the components should be compatible with existing setup for seamless monitoring.
- f. Based on generic solution design, minimum capacities and specifications for the components have been worked out and detailed in subsequent sections. However, these are only bare minimum requirements and the bidder is at liberty to suggest better solutions to meet the overall SLA requirements.
- g. Power cabling inside Server Farm and Control area shall be of copper. The cables and conduits used inside the zones shall be of FRLS quality. Signal referencing copper Earthing using braided copper wire of 6 Gauge inside the IT Centre to be used.
- h. The bidder shall work in cooperation with various agencies working at Secretariat Data Center (like service providers) during course of implementation.
- i. Operation & Maintenance of the new setup and the existing Server firm enclosure till 31<sup>st</sup>

December, 2029.

## 2.1. Layout and Design Plan for New Rack Enclosure

The selected bidder shall submit the basic layout and proposed design plan of the room including the following :

- new Rack enclosure
- Access Control System
- False ceiling
- Electrical and Lighting fixtures
- Civil addition and alteration details
- Internal/ sectional elevation (if required)
- Cabling Layout
- Fire Extinguisher
- NOVEC based gas suppression as per NFPA guidelines
- Hot & cold aisle containment – Closed Loop Cooling to address high density racks & improve cooling efficiency
- HVAC Systems
- Essential safety & security components such as CCTV, Access control (Biometric reader), Rodent Repellent, Water Leak Detection (WLD) System, Smoke detector, Temperature/Humidity sensor, Alarm beacon etc.

### Design Basis / Requirement:

- Design: Modular and Scalable design for power and cooling
- IT Load to support: 25 kW Total
- 42 U, IT Racks with rack power distribution units

### Racks & Containment

- Glass door with lock at the front of the CAC and split door with lock at the rear of the HAC
- Rack frame is, scalable and modular with safe load carrying capacity of 1000 Kg
- Base plinth with 100 mm height
- Cable entry provision from top & bottom both side of rack and Cut outs with rubber/brush grommet on top and bottom cover of rack for cable entry
- Vertical Cable manager on both LHS & RHS on rear side
- Thermally insulated cold aisle chamber
- Blanking panels to prevent air mixing
- Fixed Shelf & Plastic Cable duct on vertical LH & RH section of racks for cable routing

### UPS

- Existing UPS at IT Centre will be used.

### Solution for Data Centre

Data Centre is proposed to house Integrated IT racks as per below:

- Smart Rack Cabinet:

Description	Type of Rack	No. of Racks
Prefabricated Smart Rack Cabinet (42U) with inbuilt cold & hot aisle containment	Server Rack 600mm W x 1200mm D	3
Prefabricated Smart Rack Cabinet (42U) with inbuilt cold & hot aisle containment	Network Rack 800mm W x 1200mm D	2

- o 02 nos. Basic Rack PDUs per IT Rack for redundant power distribution to IT Components.
- o Precision Cooling Units for Modular Integrated Data Centre – N+N Configuration (Row based Precision cooling) to cater to the IT load in N+N topology
- o Design Conditions as per summer outside conditions / ASHRAE guidelines.
- o Fire Detection and Suppression for Critical IT assets (Integrated infrastructure)– NOVEC 1230/FK-5-1-12.
- o Access Control, Temp & humidity, WLD, Rodent Repellent – dedicated for Integrated Data Centre Solution.
- o Web based monitoring - Single Window Dashboard with current status of all critical equipment to be through the existing Operation centre

The table below indicates the electromechanical systems of Integrated Modular Rack enclosure solution as per relevant Indian Standards.

SI No	System Description	Standard Requirement	Remarks/Guidelines
1	Utility Incomer	01 no.	Odisha Secretariat shall provide the power and bidder shall be responsible for wiring till Data Centre Electrical Panel/DB
2	Backup DG Power plant	N+1	Odisha Secretariat shall provide
3	UPS System for critical load	N+1	N+N (Two separate Distributed path for concurrent maintainability)
4	Battery Back Up	15 min	15 min @ rated load per UPS via 12V VRLA/SMF Batteries
5	Power path for Racks	Dual Path	
6	Critical load-cooling system (HVAC)	N+N	Closed Loop rack cooling
7	Grounding	As required by ANSI/TIA-607-B/IS 3043	Data Centre grounding infrastructure
8	Fire Protection & Safety		
9	Gaseous Suppression System	Clean Agent	NOVEC 1230/FK-5-1-12 gas-based fire suppression system
10	Fire Detection - Alarm System		Yes
11	Water leak detection		Yes
12	Access Control System & CCTV for live monitoring		Yes
13	Monitoring	Status of All critical equipment's & alarms	Monitoring unit with Sensors with notification system (Water Leak sensor for Smart Row, Temp & Humidity sensors, Beacon & Buzzer- Sound and Flash Led Alarm, Door status sensor & Smoke detectors)

## 2.2. Site Preparation

The selected bidder shall undertake the required extension of Data Centre with the new provision of Precision A/C, Fire Management System, Humidity control system, Access Control system etc.. The new Server Farm enclosure should operate with an uptime of 99.67%.

### 2.2.1. Civil & Interior work

The room shall be sealed in such a way that external air should not enter into the area and should have raised floor tiles. Necessary civil work for this shall be carried out and the same has to be assessed by the firm and concrete proposal shall be submitted with the bid.

Interior shall be designed as per Data Centre standards. The wall should be painted with eye soothing color. The false ceiling should be made minimum below 18" from the roof of the room with proper provisioning of light and air conditioning etc. The material used in the false ceiling should be such that it should absorb sound and no echo is produced inside the server Farm. Necessary partitioning, earthing etc. if required has to be done. The entrance side of the Server Farm should be transparent above 2'6" from the ground. The bidder is free to give the best design as per new technology and standards. Site strengthening work (if any) would be the responsibility of bidder and it would ensure floor loading capacity (superimposed live load) of minimum 500 kg / sq.ft. Water Leak Detection System shall be in place. The water leak detector is to detect any seepage of water into the critical area and alert the Security Control Room for such leakage.

### 2.2.2. Electrical work and lighting

The bidder shall do all the electrical wiring inside the room and new Rack enclosure using certified best materials available (as per IEC 60439 , IEEE 1100 etc standards) to ensure that no short circuit happens at any point of time. The bidder has to provide wiring from each rack to the power distribution points of existing UPS (available with 80 KVA with N+N architecture). The complete wiring for Air Conditioning has to be done by the bidder starting from the power source. Proper insulation should be made so that electrical signal should not interfere with others. The electrical wiring should be such that additional power point should be made available for each rack keeping in view the average load factor in the rack as 5KVA.

- The electrical cabling Work shall include the Main electrical panel in IT Center, APFC Panel Power cabling, UPS point wiring, Power Cabling for Utility component and Utility Points etc, Online UPS, Separate Earth Pits for the component
- Power Distribution shall be through Power Distributions Units (PDU)/MCB Distribution Boxes. Power in the racks and other components shall be provided with two sockets with power coming from separate UPS in each of these sockets.
- The bidder is required to maintain two electrical distribution paths (one normal & one alternate) for the cabling inside the server farm area in the proposed IT Centre

Specifications for Electrical Cabling – Fire retardant cables of rated capacity exceeding the power requirement of fully blown configuration of the existing and proposed component to be used. For expansion needs suitable redundant power points to be provided at suitable locations. All materials used shall conform to IS standards as per industry practice.

**Bunching of Wires** – Wires carrying current shall be so bunched in the conduit that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.

**Drawing of Conductors** – The drawing Aluminium / Copper conductor wires shall be executed with due regards to the following precautions while drawing insulated wires in to conduits. Care shall be taken to avoid scratches and kinks, which cause breakages.

**Joints** – All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made inside conduits and junctions boxes. Conductors shall be continuous from outlet to outlet.

**Mains & Sub-Mains** – Mains & sub-mains wires where called for shall be of the rated capacity and approved make. Every main and sub-main shall be drawn into an independent adequate size conduit. Adequate size draw boxes shall be provided at convenient locations to facilitate easy drawing of the mains and sub-mains. An independent earth wire of proper rating shall be provided. The earth wires shall run along the entire length of the mains and sub-mains.

**Load Balancing** – Balancing of circuits in three-phase installation shall be planned before the commencement of wiring.

**Color Code of the Conductors** – Color code shall be maintained for the entire wiring installation, Red, Yellow, Blue for three phases and “OFF” circuit black for neutral and green for earth (or bare earth).

**Fixing of the Conduits** – Conduits junction boxes shall be kept in position and proper holdfasts shall be provided. Conduits shall be so arranged as to facilitate easy drawing of the wires through them. Adequate junction boxes of approved shape & size shall be provided. All conduits shall be installed so as to avoid stream and hot water pipes. After conduits, junction boxes, outlet boxes & switch boxes are installed in position their outlets shall be properly plugged so that water, mortar, insects or any other foreign matter does not enter into conduit system. Conduits shall be laid in a neat and organize manner as directed and approved by OCAC or person on their behalf. Conductors shall be planned so as not to conflict with any other service pipe lines / ducts.

**Protection** – To minimize condensation or sweating inside the conductors all outlets of conduit system shall be adequately ventilated and approved by the proper competent authority. All screwed and socketed connections shall be adequately made fully water tight by use of proper jointing materials.

**Switch-Outlet Boxes and Junction Boxes** – All boxes shall conform to all prevailing Indian Standards. The cover plates shall be of best quality Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material, which should be mechanically strong and fire retardant. Proper support shall be provided to the outer boxes to fix the cover plates of switches as required. Separate screwed earth terminals shall be provided inside the box for earthing purpose.

**Inspection Boxes** – Rust proof inspection boxes of required size having smooth external and internal Finish shall be provided to permit periodical inspection and to facilitate removal and replacement of wires when required.

The room should be lighted properly so that each and every point inside the Farm are visible.



### **2.2.3. Air Conditioning**

Air conditioning system (precision air conditioning) should be exclusively installed to maintain the required temperature within the enclosure on a 24 x 7 x 365 days operation basis. The Air-conditioning system should have either on N+N or N+1 redundancy to maintain a temperature of 20 degree centigrade with variation of +/- 5 degree. The units should be able to switch the air conditioner on and off automatically and alternately for effective usage in pre-defined sequence. Precision Air Conditioning systems specifically designed for stringent environmental control with automatic monitoring and control of cooling, heating, humidification, dehumidification and air filtration function should be installed and effectively monitored. The air is to be distributed evenly.

### **2.2.4. Temperature and humidity**

The Rack enclosure should be controlled with precision environment parameters. The temperature inside should be maintained at 20 degree centigrade with a precision of  $\pm 5$  degrees and humidity less than 50%. The Precision Air Conditioning shall be provided to maintain 99.67% up time. Best technology that would minimize the air-conditioning load and ensure precision air conditioning may be proposed by the bidder. Temperature and Humidity should be measured at Rack Level, as well as at floor/room area level. Necessary sensors for monitoring temperature at the Rack level may be supplied by the bidder.

### **2.2.5. Installation of Fire Detection and Control System**

The selected bidder has to install proper fire management system such as VESDA (Very early smoke detection appliance), FM200 (waterless fire protection system) etc. for detection and control of fire inside the Rack enclosure and the room where it will be installed along with smoke detection system. The system should be able to automatically operate in case of incident of fire/smoke. Bidder would be responsible for refilling the gas as per requirement and in case the pressure is below threshold value.

### **2.2.6. Installation of CCTV Surveillance systems**

The Selected bidder shall install a CCTV surveillance system inside the room and PRack enclosure so that each and every activity within the enclosure and room would be captured and stored in a DVR/NVR/HDD(hard disk drive), which will be monitored from the existing Operation centre on real time basis. Necessary cabling and installation of DVR/NVR, Display unit will be the responsibility of the bidder. CCTV footage is to be kept to meet legal, regulatory, ISO Policies compliance requirements. The record retention period shall be as per DC policies.(Policies shall be provided on request). The CCTV system should provide an on-line display of video images on monitor.

### **2.2.7. Installation of Access Control System**

Access to the new Rack shall be given to authorised officers only. Therefore, a physical access control system shall be installed with feature viz. biometric / access card / IRIS System / Electromagnetic door lock & connected to the existing Operation Centre. The bidder shall generate report of all Access logs /User visits / Suspicious or Untoward activity in the premises & surrounding areas of the Data Centre. Management of Physical Access to the Data Centre will be as per the policies set by the OCAC / Head IT Portal. The door shall unlock in the event of a fire alarm or in the event of a power failure.

### **2.2.8. Rodent repellent**

The entry of Rodents and other unwanted pests to this area shall be controlled using nonchemical, non-toxic devices. Ultrasonic pest repellents shall be provided in the flooring and ceiling to repel the pests without killing them of the following minimum specification :

Configuration	: Master console with necessary transducer
Operating Frequency	: Above 20 KHz (Variable)
Sound Output	: 50 dB to 110 dB (at 1 meter)
Power output	: 800 mW per transducer
Power consumption	: 15 W approximately
Power Supply	: 230 V AC 50 Hz
Mounting	: Wall / Table Mounting

### **2.2.9. Other Technical Specifications**

- The precision air-conditioners should be capable of maintaining a temperature range of 20 degree with a maximum of 2 degree variation on higher and lower side and relative humidity of 50% with a maximum variation of 5% on higher and lower side.
- The unit casing shall be in double skin construction on the side panels and single skin on the front & back panels for longer life of the unit and low noise level.
- For close control of environment conditions (Temp. and RH) the controller shall have (PID) proportional integration and differential.
- The precision unit shall be air cooled refrigerant based system to avoid chilled water in critical space.
- The internal rack layout design shall follow cold aisle and hot aisle concept as recommended by ASHRAE.
- The refrigerant used shall be environment friendly HFC, R-407-C/ equivalent in view of long term usage of the data centre equipment, availability of spares and refrigerant.
- The fan section shall be designed for an external static pressure of 25 Pa.

## **2.3. Acceptance Testing and Commissioning of the Extension**

- a. OCAC shall issue certification of Acceptance Testing/ commissioning after verification of the availability of all the defined services as per the contract signed between the successful bidder and OCAC. The successful bidder shall be required to demonstrate all the services / features / functionalities as mentioned in the agreement.
- b. Commissioning shall involve the completion of the site preparation, supply and installation of the required components and making the Server Farm at IT Centre available to OCAC for carrying out testing operations and getting the acceptance of the same from OCAC.
- c. All documentation related to the new Server Farm and relevant acceptance test documents

(including all Components) shall be completed & submitted before the final acceptance test to OCAC.

## 2.4. Operation & Maintenance of Existing Server Firm and the New Setup

The selected bidder shall :

- a. Provide 24x7 Operation & maintenance of existing Server Firm (as per Bill of Material & setup details at Clause 2.7 and 2.8) by taking over from the existing Service Provider till 31<sup>st</sup> December 2029.
- b. Provide 24x7 Operation and Maintenance services till 31<sup>st</sup> December 2029 from the date of acceptance of commissioning for new Setup and its Bill of material proposed at Clause 2.9) .
  - a. Upgradation of BMS.
  - b. Monitor and maintain the logs for cooling Units, Fire Detection System, Water Lake Detection System, Gas based Fire Suppression System, Main LT Panel and Temperature & Humidity Sensors for the existing Server Farm and the new setup.
- c. Ensure uptime of 99.67% of the infrastructure during this period and shall be responsible for repair, replace faulty components so that the Server Farm runs uninterruptedly.
- d. Deploy following resources in three shifts :
  - Technical resource for managing the BMS
  - Technical resource person to manage the power system and Air Conditioning
- e. Monitor and manage the staff on a daily basis.
- f. Provide the following services as per SLA :
  - Ensure availability of the Server Farm and Server Farm Operation centre infrastructure (Physical) including but not limited to Power, Cooling, CCTV, Access Control and other peripheral equipment installed at the time of commissioning.
  - Facilitate hosting of application infrastructure.
  - Provide power & cooling requirements up to the servers and associated infrastructure.
  - Ensure availability of the other peripheral infrastructure such as CCTV, VESDA, etc.
  - Provide access card activation service to access the server farm area in consultation with OCAC.
  - Submit report on the functioning of all equipments to OCAC as well as the quarterly SLA performance report.
  - Maintain records of the maintenance of the basic infrastructure and shall maintain a logbook on-site that may be inspected by OCAC / Head IT Portal at any time. The Bidder shall maintain documentation for installation, testing, commissioning of any system/sub-systems that is installed or upgraded.
  - Furnish the Escalation matrix and keep it up to date during the entire period of the contract.
  - Monitor Attendance of resources deployed at DC through Biometric system installed at IT Centre Secretariat.
  - Filling of gas in the fire suppression system and Air Conditioners as and when required.

OCAC reserves full right to change this scope of work at any given point of time. As and when such changes are made to the scope, the same will be intimated to the bidder.

## 2.5. Vendor Management

The selected bidder shall be responsible for :

- a. Coordination with all the project stakeholders to ensure that all Server Farm and Server Farm Operation centre activities are carried out in a timely manner.
- b. Coordination with vendors and OEMs to ensure that time and equipment dependencies are

- optimally managed
- c. Coordination and follow-up with all the relevant vendors to ensure that problems and issues are resolved in accordance with the SLAs.
- d. Ensure that unresolved issues are escalated to concerned person in accordance with the escalation matrix.
- e. Maintain database of the relevant vendors with details like contact person, telephone nos., escalation matrix, response time and resolution time commitments etc.

## 2.6. Physical Infrastructure Management and Maintenance Services

All the devices that will be installed in the IT Centre as part of the physical infrastructure of Server Farm area should be manageable with BMS and shall be centrally and remotely monitored and managed on a 24x7x365 basis. Industry leading infrastructure management solution should be deployed to facilitate monitoring and management of the IT Centre Infrastructure on one integrated console. The physical infrastructure management and maintenance services shall include :

- a. Proactive and reactive maintenance, repair and replacement of defective components. The cost for repair and replacement shall be borne by the selected bidder. Component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA). In case the selected bidder fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.
- b. Proactive monitoring of the entire Physical infrastructure installed at site through Building Management Software.
- c. Material inward/ outward control as per policies set by the OCAC / Head IT Portal.
- d. Reporting incidents to the client about the non-functional / faulty components when it occurs.
- e. Time is the essence of the Project and hence the bidder shall at all times maintain sufficient manpower, resources, and facilities, to provide the Services in a workman like manner on a timely basis. The selected bidder shall have to stock and provide adequate onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met.

To provide this service it is important for the selected bidder to have back to back arrangement with the OEMs.

**Important :** No products supplied under the RFP should be end of life or end of support. No equipment model should have been introduced in the market not later than 1 years back as on date of the submission of bid.

## 2.7. Bill of Material for the Existing Server Firm & its Operation Centre

SI	List of Devices	Detailed BOM	Make	Model
A	Server Firm Enclosure			
1	Fire Alarm & Gas suppression System	1 Fire detection Panel	Siemens	FC2005
		10 Smoke Detector	Siemens	Siemens
		1 Gas Release Panel	Siemens	RE120GR
		2 Gas Cylinder Tank	Siemens	NOVEC 1230
		2 Hutter	Siemens	Siemens
2	CCTV System	11 Cameras	HIKVISION	DS-2CD2321G0-I
		1 32" LED	LG	S2SP510M
		1 NVR	HIKVISION	DS-7616NI-K2/16P
3	Rodent Repellent System	1 Rodent Panel	Siemens	R-SCAT1Z12
		6 Rodent reflector	Siemens	Siemens

4	Precision Air Conditioning system	CRV_1	Vertiv	CRV0020
		CRV_2		
		CRV_3		
		CRV_4		
5	Power supply to racks	IPDU's	Vertiv	EMERSON N/w power
6	Racks	12 Racks	Vertiv	Vertiv
		(10 Server Racks and 2 Network Racks)		
		Server Rack Size is 600mm X 1000mm		
		Network Rack - Open Rack with vertical Wire Managers		
7	Electrical Work	1 Main Electrical MCCB	Vertiv	Vertiv
		12Nos of Light Fixture	PHILIPS	PHILIPS
		1 Electrical breaker	Vertiv	Vertiv
		2Nos Earth Pit	Vertiv	Vertiv
B	Operation Centre			
1	Access Control System	1 Reader	Morpho(Simens)	Safran (MorphoAccess Sigma Lite Multi
		1 Reader_1	Siemens	HID Iclass
		1 Reader_2	Siemens	HID Iclass
		1 Magnetic Door Lock	EBELCO	EBELCO
		1 Magnetic Door Lock	EBELCO	EBELCO
		1 Magnetic Door Lock	ALGATEC	ALGATEC
		1 Controller	Siemens	Acc-Lite
		1 DRI_1	Siemens	Siemens
		1 DRI_2	Siemens	Siemens
		Access Control Software	Siemens	Sipass
		1 Management System(Computer)	HP	406 G1 MT Business PC
2	Building Management System	1 DDC Panel	Siemens	Siemens
		2 Controller for BMS	Siemens	PXC22
			Siemens	PXC36
		1 Controller for BMS	SEN TELIQUIP	SEN TELIQUIP
		15 Temperature Sensor	Siemens	QFA2060
		1 65" LED	TCL	Percee TV
		Desigo CC BMS Software	Siemens	DESIGO CC
1 Management System (Computer)	HP	406 G1 MT Business PC		
3	Public Addressing System	1 Amplifier	Bosch	Plena Mixer Amplifier
		1 DVD Player	Sony	Sony
		1 Microphone	Bosch	Bosch Plena
		5 Speaker	Bosch	Bosch
4	VESDA System	1 Vesda Panel	Siemens	Siemens

		3 Nosel	NA	NA
5	Water Leak Detection System	1 WLD Panel	Siemens	JE3523
		4 Sensor Cable	Siemens	Siemens
6	LG split Air Conditioner	2 AC	LG	KSQ24ENXA
7	Others	8 Nos of Chair and 1 Desk	NA	NA

## 2.8. Present Server Firm setup details

### a. Building Management System

- The present setup uses the Building Management System (BMS) Software to monitor and maintain the logs for cooling Units, Fire Detection System, Water Lake Detection System, Gas based Fire Suppression System, Main LT Panel and Temperature & Humidity Sensors across the Server Farm.

### b. Cooling System - Air Conditioning

- The existing Portable Server Farm enclosure has built in with Precision Air Conditioner with N+1 or N+N architecture to maintain a temperature of 20 degree centigrade with variation of +/- 5 degree.
- The room, where the Modular server firm is installed, maintains a temperature of less than 30 degree Celsius with provision of additional Air Conditioner in N+1 or N+N architecture.
- The units switch the air conditioner on and off automatically and alternately for effective usage in pre-defined sequence.
- Precision Air Conditioning systems specifically designed for stringent environmental control with automatic monitoring and control of cooling, heating, humidification, dehumidification, and air filtration function are installed and effectively monitored for even air distribution.

### c. Temperature and humidity

- The Portable Server Farm enclosure is controlled with precision environment parameters. The temperature inside Server Farm area is maintained at 20 degrees centigrade with a precision of  $\pm 5$  degrees and humidity  $45\% \pm 10$ . The Precision Air Conditioning is provided for the Portable Server Farm enclosure to maintain upto 99.67% up time.
- Temperature and Humidity are measured at Rack Level, as well as at floor/room area level with sensors for monitoring temperature at the Rack level.
- In the Server farm operation Centre there are 2 Nos of 1.5 Tn Comfort Split AC.

### d. Power management

- Provisioning the power requirements with a LT panel has been made for the Server Farm Infra and Logs are kept at BMS System.
- There are total 24 Nos of Power Distribution units in 12Nos of Rack to supply power to the IT infrastructure and 12Nos of Light Fixture and all other electrical equipments for the server Farm.

### e. Fire Detection and Gas based Fire Suppression System

- The Server Farm has 10 Nos of smoke and temperature Sensors to maintain any kind of fire incident and any alarm generated in this system is captured in BMS.

### f. Rodent Repellent System

- The entry of Rodents and other unwanted pests has been controlled using nonchemical, non-toxic devices. Ultrasonic pest repellents have been provided in the flooring and ceiling to repel the pests without killing them.
  
- g. Water lake Detection System
  - The Server farm can detect and monitor the any kind of water under the floor and the logs are maintained in BMS System.
  
- h. Data Centre Access Control System
  - Access to the server Farm area is given to authorised officers only. All Access logs /User visits / Suspicious or Untoward activity in the premises & surrounding areas of the Data Centre are maintained as per the policies set by the OCAC / Head IT Portal. The door unlock facility is there in the event of a fire alarm or in the event of a power failure.
  
- i. Security and Surveillance System
  - CCTV surveillance system inside the room and Portable Server Farm enclosure captures each and every activity within the Portable Server Farm enclosure and room and stores in a DVR/NVR/HDD (hard disk drive). The Server Farm Operation centre monitors the activities within the server room on real time basis and CCTV footage is maintained to meet legal, regulatory, ISO Policies compliance requirements. The record retention period is 90 days.
  
- j. Asset Management
  - A datasheet of all the IT and non IT physical Asset in Server Farm is maintained for reference.

## 2.9. Bill of Material for the New Data Centre solution

The bidder shall submit the Bill of Material including but not limited to the following along with Technical bid else the bid will not be considered for further evaluation.

SI #	Specifications	Quantity	Remarks
<b>A</b>	<b>Rack Containment &amp; Accessories</b>		
1	No. of Network Racks (600mm Width x 1200mm Depth x 42U Height)		
2	No. of Network Racks (800mm Width x 1200mm Depth x 42U Height)		
3	U space available for IT Load		
4	Containment		
5	Cold Aisle		
6	Hot Aisle		
7	Blanking Plates		
8	Utility cabinet to mount Electrical DB Panel		
<b>B</b>	<b>In-row Precision Air conditioner</b>		
1	In The Row Precision AC 25 KW as per Compliance sheet		
2	Cooling Redundancy		
<b>D</b>	<b>Environmental Monitoring</b>		
1	Detailed Monitoring & Diagnostics		
2	Temp Monitoring		
3	Humidity Monitoring sensor for each rack		
4	Door Switch Sensor All doors		
5	Water Leak Sensor		
6	Alarm Beacon		

SI #	Specifications	Quantity	Remarks
7	Event Alerts Email, Visual by status-based Rack lighting		
8	RS485 Port		
10	IP Based 1.3 MP Camera for Live viewing		
<b>E</b>	<b>Electricals &amp; Accessories</b>		
1	Kit, Electrical, DB Panel for SR		
2	LED Lighting		
3	Rodent Repellent System,		
4	Rack PDU with PDU 0U, 32A, 230V, 20C13 and 4C19, IEC309 single phase as per data sheet		
<b>F</b>	<b>Fire detection &amp; suppression system</b>		
1	Automatic Novec1230 based Fire Suppression as per NFPA 2001 guideline		
2	Access Control		
3	Fire Alarm & Detection		
7	Standard Warranty		



### **3. General**

#### **3.1. Site Visit**

The bidder is expected to visit existing IT centre, Odisha Secretariat (within 7 days of publication of RFP) for survey and obtain additional information pertaining to the resources/ facilities available. OCAC shall arrange for the bidder's personnel to gain access to the IT Centre. The cost of visiting the site (s) shall be borne by the bidder.

It would be deemed that the bidder has made a complete and careful examination to determine the matters incidental to the performance of its obligations including, but not limited to:

- Site, the temperature fluctuations, humidity and dust levels
- The existing Server firm enclosure with its allied infrastructure
- The Operation centre
- The conditions of electric supply and possibility of fluctuations.
- Conditions affecting transportation, access, disposal, handling and storage of the materials and services
- Applicable laws, applicable permits and all other matters that might affect the bidder's performance under the terms of this bid.

#### **3.2. Rights of Access to Information**

At any time during the Contract period, the selected bidder will be obliged to provide an access of information to OCAC, and/or any replacement successful bidder in order to make an inventory of the Assets (including hardware / software / active / passive), layouts, diagrams, schematics, documentations, manuals, catalogs, archive data, IP addressing, Live data, policy documents or any other material related to IT Centre Project.

#### **3.3. Exit Plan**

- a) The selected firm will provide systematic Exit Plan and conduct proper knowledge transfer process to handover operations to Department Team at least three months before project closure. All knowledge transfers should be documented.
- b) Implementing Agency will ensure capacity building of Technical Team nominated by OCAC on Operation & maintenance of the Setup.
- c) Handover the facilities to the team identified by OCAC, after the tenure of the bidder ends.
- d) During the exit management period the Successful Bidder will allow OCAC access to information reasonably required, defining the current mode of operation associated with the provision of the services to enable OCAC to assess the existing services.

#### **3.4. Jurisdiction of Courts**

Odisha Courts will have exclusive jurisdiction to determine any proceeding in relation to this Contract.

#### **3.5. IT Act 2000 & ITAA (2008)**

Besides the terms and conditions stated in this document, the contract shall also be governed by the overall acts and guidelines as mentioned in IT Act 2000, IT Amendment Act 2008 and any other guidelines issued by DeitY, GoI from time to time.

## 4. Expected Project Timeline

Week	Activity	Remarks
T <sub>0</sub>	Project Kick-off & takeover of operation of existing setup with resource allocation	Acceptance of Purchase order
T <sub>0</sub> + 1	Preparation & submission of IT Centre Floor Lay-out by Selected Bidder for extension	IT Centre site to be provided by OCAC
T <sub>0</sub> + 2	Detailed Design of Physical Infrastructure	Bidder shall provide a detailed project plan with timelines, milestones etc. for supply, installation and commissioning of the physical components for the new Rack enclosure
T <sub>0</sub> + 3	Approval of New Server Farm Lay-out	To be obtained from OCAC
T <sub>0</sub> + 8	<ul style="list-style-type: none"> <li>• Civil Work for new setup</li> <li>• Partitioning of Walls</li> <li>• Power Cabling</li> <li>• Electrical wiring, lighting, fixture &amp; point wiring</li> <li>• Delivery of equipment</li> </ul>	As per scope
T <sub>0</sub> + 12	<ul style="list-style-type: none"> <li>• Installation of Smart Rack enclosure with Access control, fire alarms, smoke detectors, CCTV, HSSD/VESDA, Rodent, Water Leak, DVR</li> </ul>	Installation of all components at the allotted space at IT Centre
T <sub>0</sub> + 13	<ul style="list-style-type: none"> <li>• Upgradation of BMS</li> </ul>	Bidder shall facilitate Verification by OCAC
T <sub>0</sub> + 14	<ul style="list-style-type: none"> <li>• Integration of new setup with Operation Centre</li> </ul>	
T <sub>0</sub> + 13	Testing & Acceptance test	By OCAC
	Operation & Support	Till 31 <sup>st</sup> December 2029

\* T<sub>0</sub> = Date of issue of Work Order

## 5. Payment Terms

Payments will be released only on satisfactory acceptance of the deliverables as per the following schedule -

S.No	Payment Schedule	Fee Payable	Remarks
1	On Delivery equipment and Site readiness	60% of Setup cost of New Rack enclosure	Payable on successful check of all the equipment by OCAC appointed Nodal Officer.
2	Successful installation of all the equipment & commissioning thereof after integration with Operation Centre	20% of Setup cost of New Rack enclosure	Payable on final acceptance test
3	CAPEX amortized over the contract period	10% of Setup cost of New Rack enclosure	quarterly equated installments
4	Operations and Management of the existing setup till December, 2029 payable quarterly at the end of each quarter	Equal QGRs for entire duration of the project - as per quoted price for Operations and Maintenance support	Against submission of quarterly O&M Report
5	Manpower	Equal QGRs for entire duration of the project - as per quoted price for manpower support	Against submission of quarterly attendance sheet
6	Upgradation of BMS	100%	Against upgradation and verification

The bidder has to quote the rate exclusive of GST which will be paid extra, at actual.

**All Payments shall be made in Indian Rupees Only and will be subject to provisions of Penalty and LD Clauses**

### Penalty

In the event the bidder is unable to meet defined milestones, a penalty of 0.5% will be charged for each week delay or part thereof from payment associated to the respective phase of work, maximum limit being 10% of the amount of respective phase. If the delay continues beyond 20 weeks, OCAC, may terminate the Agreement by forfeiting the security deposits and revoking the Performance Bank Guarantee.

Ongoing performance and service levels shall be as per parameters stipulated in this RFP, failing which OCAC may at its discretion impose penalties on the selected bidder as defined in Service Level Agreement.

**Note:**

- Due payments shall be made promptly by the purchaser, after successful completion of the target milestones (including specified project deliverables).
- All payments are subject to the application of necessary penalties as required under the SLA.
- Taxes will be paid as per the rate prevalent at the time of billing

**6. Service Level & Penalty**

**6.1.SLA Objectives**

- Bidder is required to provide a minimum overall uptime of 99.67% for all equipments under the scope.
- Bidder shall provide services as per SLA matrix, which defines maximum acceptable response as well as rectification time for resolving the problem.
- Bidder shall submit the uptime report with temperature humidity etc. generated from the BMS.

**6.2.SLA Duration**

- Timing: 24 X 7
- Prime Business Hours 8 AM to 8 PM
- Extended Business Hours 8 PM to 8 AM

**6.3.SLA Matrix**

- The bidder shall provide the required services as per SLA matrix given below: -

<b>SLA Matrix for Prime Business Hours (8AM to 8PM)</b>	
<b>Severity Level</b>	<b>Max. Rectification Time</b>
1	1 Hour
2	2 Hours
<b>SLA Matrix for Extended Business Hours (8PM to 8AM)</b>	
<b>Severity Level</b>	<b>Max. Rectification Time</b>
1	2 Hours
2	4 Hours

- Downtime would start from the date and time of reporting of problem to helpdesk of operation team or identified by the Bidder.

**6.4.Planned Down Time:**

- The Bidder has to seek prior approval from OCAC for the planned downtime required, if any.
- The planned downtime would not be added to the SLA downtime.

**6.5.SLA Severity Levels Defined**

The severity level of each component defines by its importance in the infrastructure and its impact in case of failure as detailed below.

**Severity Level-0**

This level is for the purpose of escalation of severity from level of 1 to zero with enhanced downtime. There are no response and rectification times defined for this level.

**Severity Level-1: Equipment covered under severity level 1 are as under -**

- Precision Air Conditioning System for the Server Farm Area
- Electrical Infrastructure
- Physical Infrastructure
- Environmental Security Infrastructure
- BMS Components like CCTV System, Access Control, HSSD/VESDA, WLDS, RRS, Fire Suppression and Detection System including the BMS software
- Comfort Air Conditioning for the Auxiliary Area

**Severity Level-2 :**

All other equipments/services not mentioned under Severity level-1.

**6.6.SLA Down Time calculation for equipments of different severity levels**

The calculation of downtime w.r.t. Severity levels is as defined below:

<b>Equipment Severity Level</b>	<b>Time hours factored for SLA</b>
Severity Level-0	Every Thirty minutes of downtime is equal to One hour of SLA downtime
Severity Level-1	Every One hour of downtime is equal to Two hour of SLA downtime
Severity Level-2	Every Eight hours of downtime is equal to One hour of SLA downtime

In case an equipment/service remains nonfunctional for more than allowed hours of the severity level, the severity level will go up for the device to the next higher level (i.e. If an equipment of severity level-2 is nonfunctional for more than 8hours the 9th hour onward the severity level for the equipment will be calculated based on the Severity level-1) and will keep on escalating to further level if still remains non-functional.

**6.7.SLA Manpower Requirements**

The bidder needs to deploy at least 7 man-power resources including one Project Manager to manage the server farm area across the shifts as mentioned in service level agreement for smooth operation of the facilities. The bidder can deploy more man-power resources as and when required for smooth operation of SDC. The tendering authority would not be liable to pay any additional cost for this. The deputed officials shall have no criminal record and should be deputed after background check. The bidder shall provide detailed CV of each of the resource being provided to OCAC before deployment of the resource at IT centre Facilities.

- At least one support engineer/staff for each of the following categories must be engaged to cater the needs.

- Air Conditioning cum Electrical Engineer
- BMS Engineer
- In each shift 2 engineers shall be engaged -
  - **Shift-1:** 06 A.M. to 02 P.M.
  - **Shift-2:** 02 P.M. to 10 P.M.
  - **Shift-3:** 10 P.M. to 06 A.M.
- The Project Manager shall be engaged from 10 AM to 6 PM (Excluding Holidays/ Public Holidays as per GoO)
- If performance of any of the resources is not up to the satisfaction, the bidder shall replace the resource within given notice period. The no. of resources may be increased if required.

Note : All above Manpower must be on Company's Payroll.

A. Penalty for non-achievement of Service Level Requirements

- A penalty on non-achievement of SLA requirements would be deducted from the due quarterly payments as per following table –

Sl. No.	Uptime of the new and existing setup	Penalty
1.	$\geq 99.67\%$	Nil
2.	$\geq 97.50\%$ to $< 99.67\%$	2.00% of O&M charges
3.	$\geq 95\%$ to $< 97.50\%$	4.00% of O&M charges
4.	Less than 95%	5.00% of O&M charges

B. Penalty on non-availability of manpower resources

Rs. 1000/- per resource per absent day maximum of Rs. 30,000/- per month