

1) Introduction

The Fertilisers And Chemicals Travancore Limited, (FACT), Udyogamandal, Kochi is a Central public sector undertaking, engaged in manufacturing and marketing of fertilizers and chemicals with an annual turnover of about ₹ 2500 crores. FACT has three manufacturing divisions, two at Udyogamandal and one at Ambalamedu, FEDO - Engineering and Consultancy Division, FEW – Engineering Fabrication division and Marketing Division with outlets all across the four southern states viz. Andhra Pradesh, Karnataka, Kerala and Tamilnadu.

FACT plans to install **Learning Management System (LMS)** at its Head office Udyogamandal, Kochi. The proposed LMS system upgrade is envisaged to facilitate quality improvement of the Company's human resources by opening up on-line learning content which will be relevant, need based and accessible round-the-clock, besides serving as a system for measuring and monitoring learning efforts individually.

2 Scope of work

The scope of Work that needs to be undertaken by the successful bidder for this work are given below and the work is to be performed as per the specifications and conditions mentioned in different parts of this document.

2.1 Supply and Installation of LMS

The scope of work of the bidder shall be supply, installation, testing overall integration and commissioning of an LMS solution. The proposed solution shall be a managed physical server based hosting model to be installed and commissioned in CSC/HO. The system should be with a Server, Virtualization software, LMS software, storage etc. The scope of work shall consist the following steps:

- 1) All hardware and software delivery
- 2) Server hardware and NAS installation and induction to the existing network
- 3) VMware installation & licensing
- 4) Deploying VMs using VMware
- 5) Moodle installation and deployment
- 6) Old Moodle data migrations
- 7) Backup solution deployment
- 8) Articulate software installation & licensing
- 9) Handing over with 3 months onsite engineer support.

- 2.2 Supply, installation and configuration of hardware and software as mentioned in Annexure . Perpetual licenses if any should be in the name of FACT.
- 2.3 The Vendor shall be fully responsible for the successful completion of the installation, overall integration of the system and meeting all the functional requirements. The scope of Vendor shall cover supply of items, transportation of items to the respective sites, loading/unloading and handling of the items, installation, configuration of the items and commissioning of the system. All insurances including transit insurance and for labour and materials will be in the scope of the Vendor.
- 2.4 The bidder shall supply of all the installation materials/accessories necessary and also carry out the unpacking and assembling of the supplied hardware systems at the work site in order to complete the user acceptance.
- 2.5 The Bidder must not bid/supply any equipment that is likely to be declared end of sale within the warranty period. The vendor would be required to replace all such equipment with latest and at least of equivalent configuration in such case.
- 2.6 Necessary rack space will be provided in a server rack located in Computer Centre Head office , Udyogamandal.

3.0) Warranty & Maintenance

- 3.1) The warranty for all the Hardware shall remain valid for a period of **five years** from the date of user acceptance.
- 3.2) During the Warranty period, vendor warrants that the goods supplied under the contract are new, unused, of the most recent version/models and incorporate all recent improvements in materials unless provided otherwise in the Contract. The vendor further warrants that the systems supplied shall have no defect arising from the design, materials or workmanship or any act or any omission.
- 3.3) The warranty should cover all materials, licenses, services and support for the hardware and software. The vendor shall administer warranties with Sl. No. and warranty period.
- 3.4) During the warranty period, the vendor shall repair/replace at the installed site, at no charges to FACT. Vendor shall register/raise/log complaint ticket with the respective OEM in case of any malfunctioning of system or failure of any individual component of the installed system. (both hardware and software), Vendor shall co-ordinate and arrange to rectify all defects/bugs/non-performance of the equipment/ services detected or reported to the supplier by FACT and the same shall be rectified without any extra

cost. The scope also includes re-installing / troubleshooting software components like VMWare, Articulate software, Backup software etc during the warranty period.

- 3.5) Vendor shall depute a Support staff fully conversant with the systems installed, at FACT Training centre / CSC (H.O), for three months from the date of commissioning for trouble shooting and smooth handover of the system to FACT.

4.0) Time schedule

The entire work including delivery, installation, testing and commissioning and training shall be completed within **8 (eight) weeks** from the date of issue of Purchase order.

5.0) Terms of payment

Sl. No.	Item	Time schedule	Payment	Liquidated Damages & Remarks
1	Delivery of all Hardware, software at FACT, Udyogamandal	6 weeks from the date of issue of Letter of Intent (LOI)	50% of Hardware, and software cost, supported by original invoices	0.5% of total cost ,per week , upto a maximum of 7.5%
2	Installation, testing and commissioning of individual as well the total system of all Hardware and software including basic training	8 weeks from the date of issue of Letter of Intent (LOI)	40% of Hardware and software cost	
4	Total completion of the project in all respects and submission of Performance Bank Guarantee	8 weeks from the date of issue of Letter of Intent (LOI)	Balance payment on submission of 10% Performance Bank Guarantee	
5	Support Staff Services at H.O.	For three months from the date of commissioning for trouble shooting and smooth handover of the system to FACT.	On a Man-month basis after three-month period	

6.0) Deliverables

- i) LMS solution/ Hardware components/ licenses to be deployed
- ii) User Acceptance Report of Hardware and system as a whole.
- iii) Training for system staff as well for key end users.
- iv) User manual
- v) Setting up of call logging system during Warranty and AMC periods.

6.1) Scope and Services Covered under Warranty

The supplier shall provide the following services under the warranty to keep the systems and peripherals in good working order:

- a) Unscheduled on-call corrective and remedial maintenance service to set right the malfunctioning of the system. This includes replacement of unserviceable parts. The parts replaced will either be new parts or equivalent in performance to new parts. In the case of a part, the defective part removed from the system will become the property of the supplier.
- b) In case where defective equipment needs to be repaired which may take some time, standby compatible equipment for that location shall be provided by supplier for business continuity.

7.0) Technical Documentation

- i) The technical documentation involving detailed instruction for operation and maintenance is to be delivered with every unit of the equipment supplied.
- ii) Such manuals shall include illustrated catalogues, reference manuals, technical manuals and operation manuals for the purpose of operating the hardware.

7.1) Training

Necessary training on Moodle, LMS system administration etc. shall be imparted to designated officers of FACT for the smooth implementation of LMS system. Necessary technical hand-outs and documentation of systems installed should be handed over to FACT.

8.0) Testing and Inspection

8.1) Post receipt / pre-installation testing:

This testing / inspection shall be performed at the Delivery office at the time of delivery of the equipment and the officer in charge of that office shall check the goods delivered against the models ordered. The officer shall also receive the goods after inspection.

8.2) Post installation / Inspection

This testing / inspection shall be performed after the completion of delivery and assembling at site. Authorized person shall verify the component level details during this testing and shall sign the user acceptance report after successful completion of the post delivery and assembling testing. Defects / shortcomings brought out in this testing shall have to be attended as per the contract within the permitted time schedule.

8.3) User Acceptance testing (UAT)

UAT will be done by performing live demo of the system installed.

8.4) Replacement

- i) If any Item or any part thereof, before it is taken over under above clause is found defective or fails to fulfill the requirements of the contract, the consignee shall give the Contractor/Vendor notice setting forth details of such defects or failure. The Contractor/Vendor shall make the defective material good, or alter the same to make it comply with the requirements of the contract forthwith and in any case within the work completion period.
- ii) Component that is reported to be down on a given date should be 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.
- iii) The selected bidder shall have to provide adequate support . Vendor to ensure that the resolution time 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. The selected bidder needs to provide a copy of the service level agreement signed with the respective OEMs.

Note: The testing & inspection as per clause 8.0 in any way not relieve the Contractor from any Warranty or other obligations under this contract.

8.5) Maintenance

- i) Free on-site maintenance services shall be provided by the Supplier/Manufacturer during the period of warranty.
- ii) The contractor will not be entitled to claim any compensation against any termination. However, while terminating the contract, if any payment is due to the contractor for maintenance services already performed in terms of the contract, the same would be paid to it as per the contract terms.

8.6) Obsolescence

- i) The bidder shall guarantee that the equipments quoted and supplied shall not be obsolete or proclaimed as 'End of Life' by the Original Equipment Manufacturer during the warranty period/ extended warranty period.
- ii) The bidder shall guarantee that the equipments shall be supported with necessary spares by the Original Equipment Manufacturer for five years

8.7) Change of Model

No change of model after the placement of order shall be entertained unless the alternate model offered are equivalent or higher in specifications and approval of the competent authority has been obtained in writing for such a change of model before the delivery of the product. Delivery of the alternate product without such an approval shall not be accepted and the department shall not be responsible for any delay in delivery schedule on this account.

8.8) Performance during Warranty Period

During the Warranty period, if the supplier fails to repair/replace the equipment supplied, within the SLA as defined in this document, the department reserves to replace the components/laptops with new ones at the Bidder's cost. All cost for such replacements shall be made by forfeiting the Performance Bank Guarantee of the supplier.

8.9) Service Level Agreement (SLA) of the system:

The Vendor has to maintain the equipment/services for efficient running at all times. However, average up time during a quarter should not be less than 95% for the entire system.

Uptime shall be calculated as:

$$\frac{(\text{Total Time} - \text{Down Time}) \times 100}{\text{Total Time}}$$

Any failure in the system or a subsystem thereof must be rectified within 24 hours of lodging complaint. If any of the system is down beyond the limits mentioned in, penalty will be charged @ 1% of the value of the item per day. Even if a peripheral or part of the system is not working, the system will be considered as down, maximum Penalty at a given stretch will be 50% of the value of the ordered item.

Any system failing at subsystem level at least three times in three months, displaying chronic fault in the system design or manufacturing defects or Quality Control problem shall be totally replaced by the Vendor at his own cost and risk within 30 days, from the date of last failure with equivalent/superior new system.

8.10) Completeness of Supplies, Installation & Commissioning:

The Vendor shall be fully responsible for the successful completion of the installation, overall integration of the system and meeting all the functional requirements, and omission of any items/services in the document shall not be sufficient reason for non-performance or under-performance of the system with respect to the functional requirements.

Vendor shall provide any other items/services other than those detailed in the document herein, which are required for the successful completion of the installation without any additional cost.

Technical Specification (TPS) for Learning Management System (LMS)

Item code :607112007	Rack Mount Intel Xeon Server for LMS		
Specification	Description	Compliance (Yes / No)	Remarks
Form factor	2U RACK		
Chipset	Intel C620 or higher		
CPU Architecture	64-bit x86		
Chassis Configuration	Min 24 x 2.5" Hard Drives		
Processor	Intel® Xeon® Gold 6226R 2.9G, 16C/32T, 10.4GT/s, 22 M Cache, Turbo, HT (150W) DDR4-2933		
Memory Capacity	2 x 64GB RDIMM, 2933MT/s, Dual Rank		
RAID Configuration	RAID 1 & 5 Supporting		
RAID Controllers	Min 8GB Cache		
Hard Drives	6 X 2.4TB 10K RPM SAS 12Gbps 512e 2.5in Hot-plug Hard Drive		
Boot SSD	2 x 480 GB SSD SATA		
Network Daughter Card	2 x Broadcom 57416 Dual Port 10GbE BASE-T & 5720 Dual Port 1GbE BASE-T		
Power Supply	Dual, Hot-plug, Redundant Power Supply (1+1), 750W		
Connectivity Cables	2 Nos 10G ethernet Cables		
Operating system	Ubuntu LTS latest version		
Management features	Remoter power On/Shutdown of server, Remote Management of Server over LAN & WAN with SSL encryption through gigabit management port, Should have virtual Media support with all required licenses. Remote KVM, Server Health Logging, Out of Band Management		
OEM Warranty	5 Years Onsite		
Recommended Makes	DELL / HP / CISCO		
Make & Model offered			

Item code :607112006	Work station	Compliance (Yes / No)	Remarks
Specification	Description		
Form factor	Desktop Tower		
Chipset	Intel® Q470 Chipset		
Processor	10 th Generation Intel® Core™ i9-10900K, 20 MB Cache, 10 Cores, 20 Threads, 3.7 GHz to 5.3 GHz, 125 W		
Memory Capacity	16 GB, 2 x 8 GB, DDR4, 2666 MHz expandable upto 64GB		
Video Card	NVIDIA® GeForce® GTX 1660 SUPER™, 6 GB, GDDR5		
SSD	M.2 2280, 1 TB, Gen 3 PCIe x4 NVMe, Class 40 SS		
Optical Drive	8x DVD+/-RW 9.5mm		
Display Port	1 VGA, 1 HDMI		
Network Adapters	1 RJ45		
USB	6 Ports		
OS	Windows® 10 Professional (64-bit) with license		
Display	27 inch or higher		
Panel Technology	IPS, WVA or higher		
Display Resolution	1920x1080, 1920 x 1200, 3200x1800, 3840 x 2160, 3440 x 1440, 4096x2304, 5120x2880 Or higher		
OEM Warranty	5 years onsite		
Recommended Makes	DELL / HP		
Make & Model offered			

Item code :607112004	NAS Storage	Compliance (Yes / No)	Remarks
CPU	Quad-core 2.1 GHz processor (Turbo Core to 3.4 GHz)		
CPU Architecture	64-bit x86		
System Memory	4 GB SO-DIMM DDR4		
Maximum Memory	64 GB to be supported		
Flash Memory	512 MB (Dual boot OS protection)		
Drive Bay	6 x 3.5-inch SATA 6Gb/s Hot-swappable		
HDD	4 x 4TB 3.5 inch drive		
Drive Compatibility	3.5-inch SATA hard disk drives		
Ethernet Port (RJ45)	Supporting 2x10G		
Form Factor	Tower / Rack mountable		
LED Indicators	Status/Power, USB, LAN, Drive 1-6, M.2 SSD 1-2		
Power Supply Unit	250W, 100-240V AC, 50-60Hz, 3.5A		
Fan	System fan: 2 x 90mm, CPU fan: 1 x 60mm		
System Warning	System Warning		
Warranty	5 Years		
Recommended makes	QNAP/ SYNOLOGY / NETGEAR / DELL/ HP		
Make & Model offered			

	Item code :607099043	43" TV	Compliance (Yes / No)	Remarks
1	Display Size	43" Smart TV		
2	Screen Type	LED		
3	Resolution:	Full HD (1920 x 1080) Refresh Rate: 50 hertz		
4	Ports / Connectivity	Minimum : 2 HDMI ports, 2 USB ports		
5	Sound	20 Watts output 2.0 Ch Speaker		
6	Display Type	Flat		
7	Built in Wifi	Yes		
8	Remote Control	Remote Control with Batteries		
9	Power Supply	AC 220-240 V, 50 Hz		
10	Mounting type	Wall Mount with fixing brackets		
11	Warranty	3 years		
12	Recommended Makes:	Sony / Samsung / LG		
13	Make & Model offered			

SI	Item code :607112005	Qty
1	VMware vSphere 7 Standard for 1 processor	1 No:
SI	Item code :607112001	Qty
1	Articulate Storyline 3 Software with perpetual license	1 No:
SI	Item code :607112002 - Backup software for LMS :	Qty
1	The proposed backup software must offer host bases/CPU based/Instance based licensing with no restrictions on type of arrays(Protecting heterogeneous storage technologies), front end production capacity or backend backup target capacity for virtual or physical servers. Perpetual License for 5VMs	1 No:
2	Licenses supplied should have support for Backup	
3	Backup software should be an image level backup software supporting popular hypervisors like Vmware and Hyper-V Virtual Environments. Provide Block level Incremental and Differential Backup and Support Incremental and Differential Imaging.	
4	The proposed backup software should provide recovery from physical servers to Virtual and image level recovery.	
5	Backup Software should provide Recovery of Application items, Complete VM recovery capabilities from the image level backup	
6	Recovery verification should automatically boot the server from backup and verify the recoverability of VM image, Guest OS and Application Consistency.	
7	The software should support varieties of backup mechanisms like Full, Incremental and Differential etc. at different frequencies I.e. Yearly, Monthly, Weekly, Daily, hourly etc. as per defined Policy. It should also have calendar-based backup scheduling. The restoration should also be supported accordingly.	
8	Proposed solution should support 24*7 real-time monitoring, with at-a-glance and drill-down views of health, performance and workload of the virtual hosts.	
9	The proposed Backup software must support Seamless Integration with Point-in-time Storage snapshots with Major OEM SAN Storages in the environment to perform faster LAN Free Backup without any overhead to Hypervisor Compute Layer, allowing recovery at the application level, the file level, and the VM level.	
	Recommended Make : Veeam	