

GOVERNMENT OF RAJASTHAN

Department of Information Technology & Communication

No.: F.5(1322)/DoIT/Tech/2020/01601/2021

Dated: 26/03/2021

Minutes of 83rd meeting of SeMT dated 16-03-2021

The Eighty Third (83rd) meeting of the State e-Governance Mission Team (SeMT) was held under the Chairmanship of Principal Secretary, IT&C on 16th March, 2021 at 12:00 Noon in the Chamber of Principal Secretary, IT&C, Room No. 5105, 1st Floor, Main Building, Government Secretariat, Jaipur – 302 005 (Rajasthan). List of participants is enclosed at Annexure – “A”.

The followings were discussed in the meeting:

1. Project : Proposal of “GIS Based CESS Collection System” (Pilot project for Jaipur City Only) of Labor Dept.

The Committee was briefed about the project proposal. Government of Rajasthan has enacted The Building and other Construction workers Act, 1996. To provide for the levy and collection of Cess on the cost of construction incurred by employers with a view to augmenting the resources of the Building and other Construction workers' welfare Board. The Building and other Construction workers' welfare Cess Act, 1996 (Cess Act) was also enacted by Central Government. Accordingly Rajasthan Building and Other Construction workers' welfare Board was constituted under section 18 of the BOCW Act, 1996 under the Chairmanship of Hon'ble Labour Minister, Government of Rajasthan.

Government envisaged to develop a GIS based system for identification and approximate coating of building and other constructions such as residential, commercial, official, factories, hospital, school, colleges etc. in urban as well as rural areas for augmenting welfare fund for construction workers under Building and other Construction Workers' Welfare Cess Act, 1996 & rules made under "1% of the total cost of all types of constructions which have been constructed since 27th July 2009.

Methodology:

The modern technology of remote sensing which includes both aerial as well as satellite based system, allows to collect lot of physical data rather easily, with speed and repetitive basis, and together with GIS helps to analyze the data spatially, offering possibilities of generating various options (modeling), thereby optimizing the whole planning process.

The purpose of using GIS is that, maps provide an added dimension to data analysis that brings us one-step closer to visualizing the complex patterns and relationships that characterize real-world planning and policy problems.

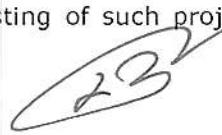
Initially, Labour Dept. intends to implement this project on pilot basis for Jaipur, Ajmer and Kota city only. After successful results, this project will be rolled out across the State in phased manner.

Financial Implication:

Brief of Jaipur Master Plan 2025:

Jaipur master plan 2025 has been prepared to provide vision regulations for development and building activity in the Jaipur Region of Rajasthan. Master development plan 2009-2025 (JDA Jaipur Master Plan 2025) envelopes 2940 square kilometers consisting JDA, Municipal Corporation, Municipal Councils and Villages.

The same kind of project has been executed for Kanpur City and Gautam Budh Nagar by Uttar Pradesh BOCW Board. The UP Board confirmed that costing of such projects come



around Rs. 1,38,000/- per square KM plus taxes. Therefore, total costing of this process for Jaipur (2940 Sq. KM.) would be around Rs. 40.00 Crore. The costing for Ajmer and Kota city would be evaluated as per Sq. KM rate after initial Survey.

SeMT advised the department to explore cost effective IT solution to use other available data for identifying the new constructions which are brought under the CESS collection, introduce the effective IT solution for voluntary compliance and explore uses of Google sheets/maps for identifying of new constructions.

The committee opined that the proposed solution is not the most suitable technical solution for CESS collection; also it was advised that GIS based property survey should be undertaken by UDH/LSG department and the same may be used by other departments.

With the permission of Chair, proposals bearing the post facto approval on file accorded by Principal Secretary, IT&C were also discussed.

2. Project : Procurement of Digital Global Positioning System (DGPS) by Revenue/ Settlement Dept.

The Committee was briefed about the project proposal that under Digital India Land Record Modernization Programme (DILRMP) currently running in the state a modern, comprehensive and transparent land records management system is being developed. The major components of the project are computerization of all land records, digitization of maps and integration of textual and spatial data, survey resurvey, computerization of registration and its integration with the land records maintenance system, development of core Geospatial Information System (GIS) and capacity building. The survey and resurvey component comprises of establishment of ground control network, ortho rectification of stereo HRSI and updation of all survey and settlement records including creation of original cadastral records wherever necessary.

For conducting survey resurvey activity, its regular updation, cross checking, inventory for newer areas, the role of modern field survey equipment cannot be negated. In this regard, DGPS or Differential Global Positioning System is an enhanced Global Positioning System that will provide proper location accuracy, in the range of operations of each system, from the 15-meter nominal GPS accuracy to about 1-3 cm in case of various implementations. Each DGPS uses a network of fixed ground-based reference stations to broadcast the difference between the positions indicated by the GPS satellite system and known fixed positions. Differential GPS involves the cooperation of two receivers, one that's stationary and another that's roving around making position measurements.

Keeping the role of modern survey equipment like DGPS in survey operations in consideration, the Hon'ble Chief Minister in his Budget Announcement no. 195 for the year 2020-21 announced the provision of 12 Differential Global Positioning System (DGPS) for conducting the survey operations in the state at a cost of Rs. 180 lakhs.

Scope of Work:

For conducting survey resurvey activity with higher precision, its regular updation, cross checking, inventory for newer areas, the role of modern field survey equipment like DPGS are required. The department is at present not well equipped in terms of modern survey

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equipment. The survey resurvey work is currently running in the 12 districts (Jaipur, Jodhpur, Jhalawar, Tonk, Bhilwara, Rajsamand, Banswara, Churu, Hanumangarh, Ganganagar, Barmer and four tehsils of Ajmer) of the State by five executing agencies. To check their work, to conduct settlement operations with higher accuracy and to meet out the departmental needs, the department intends to procure 12 DGPS instruments so that the existing infrastructure is strengthened.

Requirement of DGPS proposed by Settlement Dept.:

S. No.	Item	Qty. (in Nos.)	Approx. cost of one unit including all taxes	Total approx. cost including all taxes (Rs. in Lakh)
Differential Global Positioning System (DGPS)				
1.	Base and Rover DGPS with multi frequency Antenna Receiver, Controller, Field Software & Post Processing, GNSS 440 Channel or more with horizontal accuracy of 3mm+0.1ppm and vertical accuracy of 3.5 mm+0.4 ppm or better etc.	12	15.00	180.00
Total				180.00

Technical specifications along with observations are attached at Annexure-“B”.

Deployment Plan:

Procurement of 12 Differential Global Positioning System (DGPS), one at the office of the Settlement Commissioner, Jaipur and eleven at the 11 regional settlement offices at Ajmer, Alwar, Bharatpur, Bhilwara, Bikaner, Jaipur, Jodhpur, Kota, Sikar, Tonk and Udaipur. Integration of GIS data with RajDhara Application is also proposed.

Financial Implication:

Total estimated cost of proposal is Rs. 180.00 Lakh.

Fund Management:

Fund is anticipated to be made by Finance Dept., GoR.

Keeping in view of the fact of urgency of work, technical approval has already been accorded by Principal Secretary, IT&C on dated 25-01-2021 as being the chairman of SeMT.

The Committee accords ex-post-facto technical approval on the proposal having estimated cost of Rs. 180.00 Lakh; subject to the funds availability and approval of funds from Finance Dept.

3. Project : Procurement of Computer Hardware and Allied Items by SI&PF Dept.

The Committee was briefed about the procurement proposal of SI&PF Department. Dept. intend to IT-strengthen the HQ, Regional Levels Offices and District Level Offices. For this purpose, SI&PF Dept. submitted the proposal to procure Computer Hardware and Allied Items i.e. Desktop (196) and Multi-Functional (B&W) Laser Printers (62) to be provided its various offices for execution of day-to-day government business process of the Department.

Required computer hardware & its Financial Implication:

S. No.	Items	Quantity (Nos.)	Estimated Unit cost	Estimated Total Cost	(Amount in Rs.)
1	Desktop Computer	196	50,000	98,00,000	
2	Multi-Functional (B&W) Laser Printer	62	55,500	34,41,000	
			Total	1,32,41,000	

Technical specifications along with observations are attached at Annexure-“C”.

Fund Management:

Expenditure would be met from the funds available with SI&PF Dept.

Keeping in view of the fact of urgency of work, technical approval has already been accorded by Principal Secretary, IT&C on dated 12-02-2021 as being the chairman of SeMT.

The Committee accords ex-post-facto technical approval on the proposal having estimated cost of Rs. 132.41 Lakh; subject to the funds availability and approval of funds from Finance Dept.

4. Project : Computerization and Digitalization Initiatives of Rajasthan Government Health Scheme (RGHS) by SI&PF Dept.

The Committee was informed about the proposal as State Insurance and Provident Fund Dept. has been given the task of getting an application platform developed for providing cashless and quality health care services to the serving employees and pensioners of Government of Rajasthan, through Government and empanelled health service providers.

SIPF under the department of Finance GoR wants to set up an IT Project Management Unit (IT-PMU), which would take the responsibility to provide support in development of RGHS application, design and develop new modules, develop use cases by using emerging technology line with the vision of common web portal providing effective health services to all the beneficiary. The financial admissibility has been issued by the Finance Department through letter dated 13-01-2021.

Due to non-availability of adequate IT platform (Application System and Hardware) leads to various challenges like Manual Paper Work, Lack of Scheme Awareness & Accessibility, Backlog & Pendency, Monitoring & Supervision, Effective Evaluation & Audit, Collaboration, Grievance Redressal, and Technical Support etc.

To overcome above-mentioned challenges, the corporation wishes to initiate a computerization project which will enable its beneficiaries and stakeholders to process the claims with full efficiency and transparency. Under this computerization initiative following key areas need to be addressed and require specific attention:

1. Application Development (Including Mobile Application)
2. Procurement of Computer Hardware (Office Use)
3. Procurement of IT Infrastructure (Application and Database Servers)



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The project aims strengthen and enable the SIPF to meet the emerging technical needs and to deliver IT enabled services to respective beneficiaries and facilitate the senior decision makers in effective policy planning, decision making and monitoring of various development plans & schemes.

Scope of Work (SoW):
1. Procurement of Computer Hardware for RGHS PMU Team-

For RGHS PMU Team (Technical and Domain Experts from the Department), following hardware need to be procured for the successful for rollout the project.

- a) Desktop System (for Development/ Support)-20 Units
- b) Monochrome Multifunction Printer (Print, Scan, Copy and Fax) Printer A4/Legal Size - **4 Units**
- c) Online/ Line Interactive UPS – **24 Units**

2. IT-infrastructure at RSDC-

Following IT infrastructure is also need to procure infrastructure for hosting the application system during the development, testing and go-live stage:

- a) Application Servers
- b) Database Server

3. Detailed Costing for Application Development and Support (IT-PMU)-

(Rs. in Lakh)

S. N.	Position	Resource Category	Man Month rate	No. of Resource		Projected Expenditure	
				Yr1	Yr2	Yr1	Yr-2
1	Team Lead	Consultant with 6-10 Yrs. of experience -Management Category	3.024	1	1	36.29	36.29
2	Business Analyst	Consultant with 3-6 Years of Experience - Management Category	2.70	1	1	32.40	32.40
3	App Development Expert	Consultant with 3-6 Years of Experience - Technology Category	2.70	8	6	259.2	194.40
4	DB Expert	Consultant with 3-6 Years of Experience - Technology Category	2.70	1	1	32.40	32.40
5	MIS Expert	Consultant with 3-6 Years of Experience - Technology Category	2.70	1	1	32.40	32.40
				Sub-Total	12	10	392.69
						327.89	
				Add NICSI Charges 7%		27.49	22.95
				Add GST @18%		75.63	63.15
				Total		495.81	413.99
				Total Project Cost (INR)			909.80



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Over all Financial Implication:

Total estimated cost of proposal is Rs. 1382.42 Lakh. Breakup of the same is as follows:

(Rs. in Lakh)

S. No.	Description	Qty.	Unit	Year-1	Year-2
1	Component: Application Development				
1.1	Application Development and Support (IT-PMU) inclusive of NICSi Charges @ 7%		LS	420.18	350.84
2	Component: Computer Hardware				
2.1	Supply, Installation of Desktop and UPS (@ 75,000 INR per unit)	20	No	15.00	-
2.2	Supply and Installation of Multi-Functional Printer with UPS (@ 35,000 INR per unit)	4	No	1.40	-
3	Component: IT Infrastructure (Servers)				
3.1	Infrastructure for Application Servers (estimated for hardware and system s/w)*	1	LS	150.00	-
3.2	Infrastructure for Database Servers (estimated for hardware and system s/w)*	1	LS	200.00	-
	Total			786.58	350.84
	Contingency @ 3%			23.60	10.53
	Total without GST			810.17	361.37
	Add GST @ 18%			145.83	65.05
	Total including GST			956.00	426.41
	Grand Total (INR)			1382.42	

*This represent actual cost of procurement, in the case lease from RISL (RSDC) yearly quotation is to be obtain with due diligence by the user department (SIPF).

Technical specifications along with observations are attached at Annexure-“D”.

Fund Management:

Expenditure would be met from the fund managed by SI&PF Department.

Keeping in view of the fact of urgency of work, technical approval has already been accorded by Principal Secretary, IT&C on dated 12-02-2021 as being the chairman of SeMT.

The Committee accords ex-post-facto technical approval on the proposal having estimated cost of Rs. 1382.42 Lakh; subject to the funds availability and approval of funds from Finance Dept.

5. Project : Hosting & implementation of mobile & web based application software for monitoring of EHV lines and tower patrolling for a period of 5 years by Rajasthan Rajya Vidyut Prasaran Nigam Ltd. (RVPN)

The Committee was briefed about the proposal of RVPNL as under the provision of the Electricity Act, 2003, RVPNL has been declared as State Transmission Utility (STU) by Govt. of Rajasthan w.e.f. 10-06-2003. Section 39(1) of this act, prohibits the STU to undertake business of trading of electricity. RVPNL provides the pathway for power within whole of



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Rajasthan. RVPN owns, builds, maintains and operates the high-voltage electric transmission system.

For maintaining such huge transmission system one of the main activity of maintaining EHV Line is Transmission Line Patrolling activity. Line patrolling activity is being performed by the officers under which jurisdiction of the line falls.

Work orders for Preventive/ periodic and condition based maintenance with Routine Patrolling and attending of associated shortcomings has been issued by RVPN for 765 KV & 400KV EHV Lines on 12.09.2019. Patrolling of 132KV & 220KV EHV lines are being done by department. It takes time for patrolling and intimation of shortcoming found during the patrolling to higher officer to manage the material, which results in collapse of transmission towers.

In this context, IT wing was directed to develop software/ mobile app for monitoring of EHV line patrolling in accordance with Power Grid Corporation of India Limited (PGCIL), who has already developed software for capturing patrolling data and recording of issues observed during patrolling.

PGCIL officers were contacted for detailing out of software developed for GPS based web/ mobile application for effective and timely monitoring of EHV lines.

PGCIL intimated that they have developed the line patrolling software with the help of firm M/s. Business Intelligence Professionals Pvt. Ltd., Bhubaneswar (BIP) and it is working efficiently in PGCIL. They demonstrated about the working of software to RVPN officers.

The firm M/s. Business Intelligence Professionals Pvt. Ltd, Bhubaneswar, was asked for presentation of line patrolling software before management of RVPN. The firm presented demonstration regarding software on 16.07.2020. During the discussion it was felt that the presentation made by the firm for the software was almost same as desired by management of RVPN. The firm agreed that modification can be made according to requirement of RVPN.

The firm M/s. Business Intelligence Professionals Pvt. Ltd, Bhubaneswar was asked for furnishing the details of implementation of the said software to other transmission utilities. The firm has intimated that they have implemented the software in APTRANSCO & PGCIL.

Being similar transmission utility, RVPN also felt that requirement of developing the software/ mobile app for monitoring of EHV line patrolling in accordance with PGCIL.

Cost of components:

Software-

The firm M/s. Business Intelligence Professionals Pvt. Ltd, Bhubaneswar was also asked to furnish revised techno-commercial proposal along with hardware requirement. The cost of EHV line patrolling software and its AMC quoted by the firm are as under:

Total Estimated Amount of software & AMC in 5 years							(Rs. in Lakh)
S. N.	Particular / Activity	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	Total
1	S/w cost	73.80	0.00	0.00	0.00	0.00	73.80
2	Annual Maintenance Charges*	0.00	13.28	13.28	13.28	13.28	53.14
3	Sub Total (1+2)	73.80	13.28	13.28	13.28	13.28	126.94
4	GST @18%	13.28	2.39	2.39	2.39	2.39	22.85
	Total	87.08	15.68	15.68	15.68	15.68	149.78
					Say (Rs. in Lakh)		150.00

*Software cost includes 1st year Annual Maintenance charges.

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Hardware-

- a) Based upon hardware requirement received from the firm, NIC was requested vide letter dated 24.07.2020 to provide hardware/ VMs required for hosting of software on NIC cloud. NIC vide email dated 07.08.2020 has intimated that presently they are unable to provide H/W or VMs as NIC cloud.
- b) BSNL was also requested vide email dated 24.07.2020 to provide hardware/ VMs required for hosting of the software on BSNL cloud. BSNL vide email dated 29.07.2020 has furnished quotation for H/W or VMs as cloud service. As per proposal furnished by BSNL, the cost of 2 Nos. VMs is Rs. 25,64,642/- incl. GST @18% per year. For 5 year total cost of hosting of application at BSNL cloud data center for 5 VMs comes out to be Rs. 3,20,58,025/- approx.
- c) RVPN has its own fully furnished Command and control center at Heerapura, Jaipur under supervision of Superintendent Engineer (Automation, N/M, Spl), RVPN, Jaipur which is being maintained by M/s. L&T Limited.
- d) As per Superintendent Engineer (Automation, N/M, Spl), RVPN, Jaipur desired hardware for this software are not available at Command Control Centre, Heerapura and need to be procured. However, space for placing required hardware is available at Command Control Centre. Backup server may be installed at some other locations e.g. Backup center at Jodhpur.
- e) If the hosting of software is considered to be at RVPN own premises, then the cost of hardware, its maintenance & connectivity comes out to be Rs. 72 Lakh as follows:

Tentative Cost for hosting of application at RVPN premises (Hardware, its maintenance & connectivity) for 5 years (Rs. in Lakh)							
S. No.	Particular/ Activity	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	Total
1	Rack for servers - 2Nos.	5.82	0.00	0.00	0.00	0.00	5.82
2	5 Nos. Servers (Incl. 2 Nos. Production, 2 Nos. Backup, 1 No. Testing Server & OS)	25.00	0.00	0.00	0.00	0.00	25.00
3	Misc. Service charges for AMC/ connectivity/ resources	6.00	6.00	6.00	6.00	6.00	30.00
	Total w/o GST	36.82	6.00	6.00	6.00	6.00	60.82
	GST @18%	6.63	1.08	1.08	1.08	1.08	10.95
	Grand Total	43.45	7.08	7.08	7.08	7.08	71.77
		Say (Rs. in Lakh)					72.00

Financial Implications:

In view of the above activities being carried out for "Hosting & implementation of mobile & web based application with minor modification in accordance with requirement of RVPN for monitoring of EHV lines and tower patrolling", the cost estimates is as under:-

Cost Hosting & implementation of mobile & web based application with minor modification in accordance with requirement of RVPN for monitoring of EHV lines and tower patrolling for a period of 5 years is approx. 222.00 Lakh. Year-wise tentative expenditure is as follows:

(Rs. in Lakh)

S. N.	Particular/ Activity	1 Yr.	2 Yr.	3 Yr.	4 Yr.	5 Yr.	Total
1.	Cost of Software & AMC	87.08	15.68	15.68	15.68	15.68	150.00
2.	Cost of Hosting of software at RVPN premises	43.45	7.08	7.08	7.08	7.08	72.00
	Total	130.5 3	22.76	22.76	22.76	22.76	222.00

Therefore, the total project expenditure of Rs. 222.00 Lakh shall be utilized within 5 years of implementation of project.

Fund Management:

Expenditure would met from the funds available with RVPNL.

Keeping in view of the fact of urgency of work, technical approval has already been accorded by Principal Secretary, IT&C on dated 12-02-2021 as being the chairman of SeMT.

The Committee accords ex-post-facto technical approval on the proposal having estimated cost of Rs. 222.00 Lakh; subject to the funds availability and approval of funds from Finance Dept.

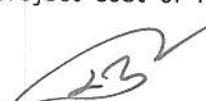
6. Project : Revised proposal for Integrated Financial Management System (IFMS) Phase-II

The Committee was informed about the revised proposal. IFMS was sanctioned under Mission Mode Project, Government of India during the year 2011-12. For streamlining current practices and exploring innovations for transparent accounting; some more activities have been identified for **IFMS Phase-II** as mentioned below:

- Shifting of works transactions on Treasury mode.
- Submission of electronic accounts to AG and reconciliation process.
- Compilation of accounts at the level of State Government.
- Linkage of IFMS with accounting operations of parastatals (PD accounts)
- Upgradation of current modules
- Integration of revenue departments with e-GRAS
- Integration of IFMS with Bhamashah

The Previous proceedings of technical approval by SeMT for the IFMS Project are as follows:

- The **IFMS Phase-II** project was technically approved in 54th meeting of SeMT held on 25-12-2014 with estimated project cost of Rs. 5275.00 Lakh.
- To enhance the IFMS, there was requirement of infrastructure and resource like hardware, system software etc. at DR, Data Centre and Development Centre under IFMS Phase-II. So, the revised project proposal was technically approved in 65th meeting of SeMT held on 16-02-2017 with estimated project cost of Rs. 9042.00 Lakh.



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Now, there is requirement to procure SAN/ LAN and switch items of Rs. 2367.00 Lakh for the IFMS project; against it, according to the budget for financial year 2019-20, a sum of Rs. 500.00 Lakh was transferred to RISL's P.D. Account Number 592 on 27-03-2020 for the procurement of SAN/ LAN and Switch items on priority basis.

The meeting of Departmental PeMT was held on 06-10-2020 and the revised list of IT items was shared by NIC via email dated 07-10-2020; with request to procure IT items in first phase for an approximate sum of Rs. 700.00 Lakh and in second phase for the sum of Rs. 1700 Lakh.

Details of the required items are as mention below:

P1- Requirement of Infra for DC IFMS project for 5 years except VMware for one (1) year -

S.N.	Item Specifications	QTY (RSDC)
1	Cisco Nexus 93180YC-EX Switch 48 10G SFP+	3
2	Cisco MDS 9148 Fabric Switch 48 16G SFP+(SW)	2
3	16 Port IP based KVM Switch Make ATEN model KN1116v	4
4	VMware vCenter Server 6 Standard for vSphere 6	1
5	VMware vSphere 6 Enterprise Plus for 1 processor	80
6	Redware Virtual Appliance Load Balancer 3G latest version	2
7	Unified Storage 200TB SSD Drives plus 100TB SAS	1
8	100TB Purpose Bilt back appliance	1
9	Network Monitoring Tool PRTG for Windows Latest version	1
10	Total Cost (Approx.) Rs.	700.00 Lakh

P2- Requirement of Infra for DC & DR IFMS project for 5 years except VMware for one (1) year:

S.N.	Item Specifications	QTY (RSDC)	QTY (DR)
1	Cisco Nexus 93180YC-EX Switch 48 10G SFP+	3	2
2	Cisco MDS 9148 Fabric Switch 48 16G SFP+(SW)	2	2
3	16 Port IP based KVM Switch Make ATEN model KN1116v	0	2
4	VMware vCenter Server 6 Standard for vSphere 6	0	1
5	VMware vSphere 6 Enterprise Plus for 1 processor	0	38
6	Redware Load Balancer Appliance 6G latest (10G SFP+)	2	0
7	Redware Virtual Appliance Load Balancer 6G latest version	0	2
8	Unified Storage 100TB SSD Drives plus 50TB SAS	0	1
9	Tape Drive LTO8 with minimum 2 arms & minimum 20 Slots	1	0
10	Manpower NFO for 5 years @5 Lakh per annum	2	2
11	Content Management System Software (8 Core License)	1	1
12	Total Cost (Approx.) Rs.	1700.00 Lakh	

Technical specifications along with observations are attached at Annexure-“E”.

Finance (Economic Affairs/ Budget) Dept. also informed that:

1. Earlier purchased 38 servers are not established due to the lack of SAN/ LAN and Switches items.
2. In the earlier approval of the project of IFMS Phase-II (having estimated cost of Rs. 9042.00 Lakh); recently proposed SAN/ LAN and Switch items were not included. Due to the necessary requirement of SAN/ LAN and Switch items; the project cost is also revised as to 10245.97 Lakh as mentioned follows:

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S. No.	Particulars	Amount (Rs. in Lakh)
1	Total Expenditure made till Dec., 2020 (including the amount of R. 500.00 Lakh transferred in the P.D. A/c of RISL)	7945.97
2	Total estimated cost of the procurement proposed to be done in 1 st Phase (Rs. 700.00 Lakh out of which Rs. 500.00 Lakh has already been transferred into P.D. A/c of RISL)	200.00
3	Total estimated cost of the procurement proposed to be done in 2 nd Phase	1700.00
4	Maintenance cost of IFMS Phase-II required for the C.F.Y. 2020-21 (Total AMC cost was demanded by NIC was Rs. 625.0 Lakh out of which Rs. 225.00 Lakh has already been transferred to NIC)	400.00
Total Estimated Revised cost of IFMS Phase-II		10245.97

Financial Implication:

Total estimated cost of the project proposal is Rs. 10245.97 Lakh.

Fund Management:

Fund is anticipated to be made from budget of Directorate of Treasuries & Accounts (DTA).

Keeping in view of the fact of urgency of work, technical approval has already been accorded by Principal Secretary, IT&C on date 18-02-2021 as being the chairman of SeMT.

The Committee accords ex-post-facto revised technical approval on the proposal having revised estimated cost of Rs. 10245.97 Lakh; subject to the funds availability and approval of funds from Finance Dept.

Meeting ended with a vote of thanks to the chair.

This bears the approval from competent authority.


 (B.S. Nathawat)
 Technical Director &
 Joint Secretary, IT&C

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Dated:

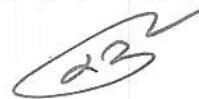
Copy for information and necessary action to:

1. P.S. to Principal Secretary, Finance Department, Rajasthan, Jaipur
2. P.S. to Principal Secretary, Dept. of IT&C, Rajasthan, Jaipur
3. P.S. to Secretary, Local Self Government Dept. (LSGD), Rajasthan, Jaipur
4. P.S. to Secretary, Planning Dept., Rajasthan, Jaipur
5. P.S. to Secretary, Labour Dept., Rajasthan, Jaipur
6. P.S. to Commissioner & Special Secretary, Dept. of IT&C, Rajasthan, Jaipur
7. P.S. to Director (Technical), RajCOMP Info Services Limited, Jaipur
8. P.A. to DDG & SIO, NIC, Rajasthan, Secretariat, Jaipur
9. P.A. to Joint Secretary (Expenditure-III), Finance Department, Raj., Jaipur
10. Shri Sanwar Mal, Financial Advisor, Dept. of IT&C, Jaipur
11. Shri B.S. Nathawat, Technical Director & Joint Secretary, Dept. of IT&C, Jaipur
12. Shri Akul Bhargava, Technical Director (IT), Finance Dept., Secretariat, Jaipur
13. Shri Y.K. Jain, Additional Director, Dept. of IT&C, Jaipur
14. Shri Kuldeep Yadav, ACP (Dy. Director), Labour Dept., Jaipur
15. Director, LNMIIT, Jaipur
16. Guard File.


 (Sushil Parihar)
 Addl. Director, IT&C

GOVERNMENT OF RAJASTHAN
Department of Information Technology & Communication**Annexure-A****83rd Meeting of SeMT held on 16-03-2021- List of Attendees**

S.No.	Name of officer	Designation
1.	Shri Ajitabh Sharma	Principal Secretary, IT&C, Rajasthan, Jaipur
2.	Shri Bhawani Singh Detha	Secretary, Local Self Government Dept., Rajasthan, Jaipur
3.	Shri Neeraj K. Pawan	Secretary, Labour Dept., Rajasthan, Jaipur
4.	Shri Virendra Singh	Comm. & Spl. Secretary, Dept. of IT&C, Jaipur
5.	Shri Alok Ranjan	Director (Technical), RajCOMP Info Service Ltd., Jaipur
6.	Shri H.K Juneja	Joint Secretary, Finance (E-III)
7.	Shri Sanwar Mal	Financial Advisor, Dept. of IT&C, Jaipur
8.	Shri Tarun Toshniwal	SIO & DDG, NIC, Rajasthan, Jaipur
9.	Shri B.S. Nathawat	Technical Director & Joint Secretary, DoIT&C, Jaipur
10.	Shri Sushil Parihar	Additional Director, Dept. of IT&C, Jaipur
11.	Prof. Rahul Banerjee	Director, LNMIIT, Jaipur
12.	Shri Vinesh Singhvi	OSD (Plan), Planning Dept., Rajasthan, Jaipur
13.	Shri Apresh Dubey	S.A (Joint Director), Dept. of IT&C, Jaipur
14.	Shri Kuldeep Yadav	A.C.P. (Dy. Director), Labour Dept., Jaipur
15.	Shri Rajkumar Singh	A.C.P. (Dy. Director), Department of IT&C, Jaipur
16.	Shri Nikhil Meena	Asst. Programmer, Department of IT&C, Jaipur



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Annexure - "B"

Technical Specification suggested by Technical Committee of Dept. of IT&C; to be utilized for "**Procurement of Digital Global Positioning System (DGPS)**" by Revenue/
Settlement Dept.

S.N.	Description	Specification	
1	GNSS ANTENNA	Fully Integrated GNSS Antenna satellites tracking systems communication through Bluetooth or WiFi	
2	NO. OF CHANNELS	440 or more	
3	SATELLITE SIGNALS, Tracking & Recording	GPS: L1, L2, L5 GLONASS: L1, L2, L3 Galileo: E1, E5A, E5B BeiDou: B1, B2 upgradable SBAS QZSS, WAAS, EGNOS, GAGAN	
4	DATA LOGGING RATE	20 Hz or better	
5	POSITION ACCURACY		
6	Long Static Accuracy	H : 3mm+0.1ppm , V: 3.5mm+0.4ppm	
7	INITIALIZATION TIME	≤ 8 Seconds	
8	ENVIRONMENTAL	Temperature: Operating -30 °C to +65 °C Storage -40 °C to +75 °C Humidity: 100%, Condensing IP: IP67 or better	
9	COMMUNICATION	1 Serial & Power, 1 Radio Modem Port, Integrated Bluetooth or Wi Fi	
10	POWER SUPPLY	Battery: Internal 5 hrs./ Li-ion each or better, External 11 V to 18 V up to 30hrs	
11	CONTROLLER SPECIFICATION	Keyboard with Display Processor Memory Ingress Protection Operating Storage Communication OS Battery backup	Inbuilt Full QWERTY Hard with Numeric keyboard/Keypad for numbering & function short keys. Minimum 4.2" Touch screen TFT VGA display with 5MP Camera with Flash , inbuilt GPS with SBAS Support & Geotagging Capturing facility , Compass 800Mhz to 1 GHz. 256 MB RAM + 4 GB inbuilt storage or better IP 67 -20 °C to + 60 °C -30 °C to + 70 °C Bluetooth, Wi-Fi, USB or equivalent Windows CE (Version as per latest industry standards) 10 hrs./Li-ion or better
12	ONBOARD CONTROLLER FEATURE	The software should be able to log data for all the signals tracked & Static, Fast Static, RTK Survey-Topography, Stake Out, Automatic survey (by distance, by time & stop & go with predefined stoppage time) Satellite view status (quality, position, sky view, satellites list, PDOP, HDOP), Line, polygon, area calculation, National grids, System settings (units, precision, parameters, COGO Functionality). Active Background maps inform of JPEG, TIFF, ECW,.SHP,.DXF,.DWG. Import / Export : to industry standard formats like CSV, DXF, Export CSV, DXF & KML etc.	
13	POST PROCESSING SOFTWARE & DWG SOFTWARE	1. Inbuilt CAD Platform Calculate distance & Angle between points, Line Joining, polygon, text, circle, etc. 2. The software should be a combined software capable of handling the GPS and Digital level data 3. Post processing: Processing of raw data of all signals like GPS L1,	

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		<p>L2, GLONASS L1, L2, and combined. Process baseline upto300kmetc</p> <p>4. Import & Export to RINEX Formats</p> <p>5. Export to industry standard formats Like DXF, CSV & KML etc</p> <p>6. Software should have an image referencing module and the surveyed data should be imported directly on the back ground of Raster image</p> <p>7. Should be able to handle RTK data and be able to Process RTK data</p> <p>8. Software should be capable of generating HTML Style reports Directly for the surveyed data</p> <p>9. Calculate distance & Angle between points, Baseline processing, Coordinate System Manager.</p> <p>10. Report Generation & the results are stored in well-designed HTML reports.</p> <p>IMAGE REFERENCING: Software should have an image referencing module and the surveyed data should be imported directly on the back ground of Raster image.</p>
14	<p>ALL ACCESSORIES, HARDWARE & SOFTWARE SHOULD BE SAME OEM MAKE. (1 Base + 1 Rover)</p> <p>1. GNSS Receiver - 2nos.</p> <p>2. Li-ion Battery - 4nos.</p> <p>3. Charger- 2nos</p> <p>4. Controller with battery & charger - 2nos.</p> <p>5. communication cable - 2nos</p> <p>6. Controller Software -2 License</p> <p>7. Tripod, Tribrach and Adaptor - 2nos.</p> <p>8. Range Pole Carbon Fiber with Soft Carrying Case - 1nos.</p> <p>9. Bipod for carbon fiber pole in Soft carrying case -1nos.</p> <p>10. Hard Plastic carrying case - 2nos.</p> <p>11. External Power Cable- 1nos.</p> <p>GNSS DATA Post Processing & DWG Software perpetual - 1 License</p>	

In the matter, various observations/ recommendations Dept. of IT&C-HQ, Jaipur are as mentioned below:

1. The Settlement Dept. has proposed to installed DGPS RTK installation across the state. After installation of DGPS (RTK) it can be used directly without establishing Base Station. As observed, this will improve accuracy of GPS/ Survey & Re-survey and other related activities of the state.
2. However, it must be ensured that:
 - This infrastructure should be maintained for its life.
 - All state government departments / agencies / PSUs should be allowed to utilize this infrastructure.
 - Data captured using these devices should be made available to DoIT&C for hosting under RajDhara so that all government departments/ agencies/ PSUs may utilize the same.
3. The proposed specifications of the devices may be reviewed at the department level to make the same generalized for wider participation.



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Annexure-“C”

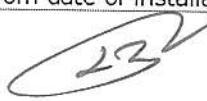
Technical Specification suggested for IT items (Desktop Computer and Laser Printer-MFP) by Technical Committee of Dept. of IT&C; to be utilized for “**Procurement of Computer Hardware and Allied Items**” by State Insurance & Provident Fund Dept.

1. Desktop Computer System-

Item	Minimum Technical Specification
Processor	Intel i5/ AMD Ryzen-5 (9 th Generation/ equivalent AMD) 6 Core, with minimum 3.0 GHz or higher (Base Frequency), 9 MB Cache or higher
Chipset	Compatible Intel/ AMD Chipset
Operating System	Windows 10 Professional 64 bit preloaded with OEM recovery partition/ Recovery DVD
Graphics	Integrated/ Discrete Graphics Card
Memory (RAM)	8 GB DDR4 2666 MHz or higher
Storage	1 TB 7200 RPM SATA Drive
Ports	Minimum 6 USB ports out of which Min 2 USB 3.0 OR higher, 1- Display Port/ HDMI, audio jack for headphone & mic
Display	Minimum 19.0" inch or higher HD Plus (Resolution 1600x900) or higher Display, TCO Certified
Antivirus	Preloaded (Latest Version) Internet Security of Trend Micro/ Quick Heal/ Symantec/ Sophos/ Kaspersky with 3 years subscription
Certification	ROHS Compliance, BEE/ Energy Star Certified, EPEAT Certified
Keyboard & Mouse	OEM USB Keyboard & OEM USB Mouse With Pad
Network Interface	Integrated 10/100/1000
Office	Open office updated version (freeware)
Accessories	All necessary cables (Power & data cables) to be included
Warranty	3 years comprehensive on site OEM warranty from date of installation

2. Laser Printer (MFP)-

Item	Minimum Technical Specification
Type of machine	Multifunction Machine
Printing method	Monochrome laser
Printing Technology	Laser(Black)
Printer Speed	25 ppm
Input Tray Capacity	100 Pages or higher
Printer Resolution	600x600 dpi or higher
RAM Size/ Memory	256 MB
Connectivity	On USB, Ethernet
Duty Cycle (Monthly)	10000 Pages
Auto Duplex Print for A4 or Legal	Yes
Functions	Print, Copy, Scan
Scanning feature	Yes
Scan Type/ Technology	Flatbed with ADF
Scan file format	PDF, JPEG, TIFF, BMP etc.
Media size supported	A4, A5, Legal
Scan Speed	15 ppm or higher
Scan resolution	600x600 dpi or higher
Copy resolution	600x600 dpi or higher
Toner/ Cartridge	Laser Black toner cartridge pre-installed
Wi-Fi	Yes
Energy Star	Yes
Compatible OS	Window 7, 8, 10 (32/64 Bit, Linux- Mac OS)
Cables/ Accessories	All the required cables, Accessories.
Software media	Driver & utility Software CD/DVD
BIS Registration	Yes
Other Certifications	UL, CE
Warranty	5 years comprehensive on site OEM warranty from date of installation



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Annexure - "D"

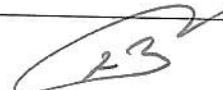
Technical Specification suggested for IT items (Desktop Computer and Laser Printer-MFP) by Technical Committee of Dept. of IT&C; to be utilized for "**Computerization and Digitalization Initiatives for Rajasthan Government Health Scheme (RGHS)**" by State Insurance & Provident Fund Dept.

1. Computer & allied items:
(a) Desktop Computer:

Item	Minimum Technical Specification
Processor	Intel i5/ AMD Ryzen-5 (9 th Generation/ equivalent AMD) 6 Core, with minimum 3.0 GHz or higher (Base Frequency), 9 MB Cache or higher
Chipset	Compatible Intel/ AMD Chipset
Operating System	Windows 10 Professional 64 bit preloaded with OEM recovery partition / Recovery DVD
Graphics	Integrated/ Discrete Graphics Card
Memory (RAM)	8 GB DDR4 2666 MHz or higher
Storage	1 TB 7200 RPM SATA Drive
Ports	Minimum 6 USB ports out of which Min 2 USB 3.0 OR higher, 1- Display Port/ HDMI, audio jack for headphone & mic
Display	Minimum 19.0" inch or higher HD Plus (Resolution 1600x900) or higher Display, TCO Certified
Antivirus	Preloaded (Latest Version) Internet Security of Trend Micro/ Quick Heal/ Symantec/ Sophos/ Kaspersky with 3 years subscription
Certification	ROHS Compliance, BEE/ Energy Star Certified, EPEAT Certified
Keyboard & Mouse	OEM USB Keyboard & OEM USB Mouse With Pad
Network Interface	Integrated 10/100/1000
Office	Open office updated version (freeware)
Accessories	All necessary cables (Power & data cables) to be included
Warranty	3 years comprehensive on site OEM warranty from date of installation

(b) Network Multipurpose Laser Printer (MFP):

Item	Minimum Technical Specification
Type of machine	Multifunction Machine
Printing method	Monochrome laser
Printing Technology	Laser(Black)
Printer Speed	25 ppm
Input Tray Capacity	100 Pages or higher
Printer Resolution	600x600 dpi or higher
RAM Size/ Memory	256 MB
Connectivity	On USB, Ethernet
Duty Cycle (Monthly)	10000 Pages
Auto Duplex Print for A4 or Legal	Yes
Functions	Print, Copy, Scan
Scanning feature	Yes
Scan Type/ Technology	Flatbed with ADF
Scan file format	PDF, JPEG, TIFF, BMP etc.
Media size supported	A4, A5, Legal
Scan Speed	15 ppm or higher
Scan resolution	600x600 dpi or higher
Copy resolution	600x600 dpi or higher
Toner/ Cartridge	Laser Black toner cartridge pre-installed
Wi-Fi	Yes



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Energy Star	Yes
Compatible Operating System	Window 7, 8, 10 (32/64 Bit, Linux- Mac OS)
Cables/ Accessories	All the required cables, Accessories.
Software media	Driver & utility Software CD/DVD
BIS Registration	Yes
Other Certifications	UL, CE
Warranty	3 years comprehensive on site OEM warranty from date of installation

(c) UPS (1000 KVA Offline):

Item	Minimum Technical Specifications
UPS Capacity	1 KVA
Warranty	3 years comprehensive on site OEM warranty from date of installation excluding Battery
Protection	Full protection
Certifications	BIS certification for the quoted model
User Display	Display for input & output voltage and battery charging
Voltage	230V +- 10%
Range	160V-280V
Power factor	0.6 or higher
Back up time	Minimum 30 Minutes with Minimum 9 AH or higher 12 V battery (SMF) time to meet backup time
Test report	OEM should submit test report for the quoted model issued by state/ central laboratory (not old from last 5 years)

Application Servers

System	Server	Core	Memory	Storage	OS version
Production	IBM Pure App/Oracle Exalogic/x86 Hardware with IBM WebSphere/Oracle WebLogic	32	96GB	6 TB	RHEL 6.5 X64 or Higher
Staging	IBM Pure App/Oracle Exalogic/x86 Hardware with IBM WebSphere/Oracle WebLogic	4	32GB	1TB	RHEL 6.5 X64 or Higher
Development	IBM Pure App/Oracle Exalogic/x86 Hardware with IBM WebSphere/Oracle WebLogic	4	32GB	1TB	RHEL 6.5 X64 or Higher

Database Server

System	Server	Core	Memory	Storage	OS version
Production	Oracle 12 C	32	96GB	6 TB	RHEL 6.5 X64 or Higher
Staging	Oracle 12 C	4	32GB	1TB	RHEL 6.5 X64 or Higher
Development	Oracle 12 C	4	32GB	1TB	RHEL 6.5 X64 or Higher

The man-power for the category No. 3, 4 and 5 is technical category and their man-month rates seems on higher side. It is suggested that Dept. should revise it.



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Annexure - "E"

Technical Specification suggested by Technical Committee of Dept. of IT&C; to be utilized for **“Integrated Financial Management System (IFMS) Phase-II”** by Finance (Budget) Department

Item no. 1: 48 Ports LAN Switch (General)

S.No.	Particulars
1	Solution Requirement
1.1	The Switch should support non-blocking Layer 2 switching and Layer 3 routing
1.3	Switch should support the complete STACK of IPv4 and IPv6 services.
1.4	The proposed switches should be part of Gartner Leader Quadrant for DC Networking for last 2 years
1.5	The Switch used have the capability to function in line rate for all ports
2	Hardware and Interface Requirement
2.1	Switch should have the following interfaces: a. Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 48* 10G Multimode fiber trans receivers for downlink connectivity & 6*40G ports for uplink connectivity (QSFP+ 40G(MM) SR-S LC QSFP-40G-SR-BD LC) & 2*(SFP+ 10G(SM) LR-LC 20 Km
2.2	Switch should have console port for local management & management interface for Out of band management
2.4	Switch should be rack mountable and support side rails if required
2.5	Switch should be provided with power redundancy
3	Performance Requirement
3.1	Switch should support Graceful Restart for OSPF, BGP etc.
3.2	Switch should support minimum 1000 VRF instances with route leaking functionality
	The switch should support 1.5M IPv4 LPM routes
	The line card proposed in the Switch should have minimum 0.7MB packet buffer per port
	The switch should support 16k multicast routes
3.5	Switch should support minimum 3.5 Tbps of switching capacity (or as per specifications of the switch if quantity of switches are more, but should be non-blocking capacity)
4	Network Virtualization Features
4.1	Switch should support Network Virtualization using Virtual Over Lay Network using VXLAN (RFC 7348)
4.2	Switch should support VXLAN (RFC7348) and EVPN symmetric IRB (RFC 7432) for supporting Spine - Leaf architecture to optimize the east - west traffic flow inside the data center
5	Layer2 Features
5.1	Spanning Tree Protocol (IEEE 802.1D, 802.1W, 802.1S)
5.2	Switch should support VLAN Trunking (802.1q)
5.4	Switch should support minimum 64K no. of MAC addresses
2.6	Switch should support VLAN tagging (IEEE 802.1q)
2.7	Switch should support IEEE Link Aggregation and Ethernet Bonding functionality (IEEE 802.3ad) to group multiple ports for redundancy
5.11	Switch should support Link Layer Discovery Protocol as per IEEE 802.1AB for finding media level failures
5.12	Switch should support layer 2 extension over VXLAN (RFC7348) across all Data Centre to enable VM mobility & availability

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S.No.	Particulars
5.13	The switch should support BGP EVPN (RFC 7432) Route Type 2, Type 4 and Route Type 5 for the overlay control plane
6	Layer3 Features
6.3	Switch should support static and dynamic routing
6.4	Switch should support MPLS segment routing and VRF route leaking functionality from day 1
6.6	Switch should provide multicast traffic reachable using: <ul style="list-style-type: none"> a. PIM-SM (RFC 4601) b. PIM-SSM (RFC 3569) d. Support Multicast Source Discovery Protocol (MSDP) (RFC 3618) e. IGMP v1, v2 and v3
7	Quality of Service
7.1	Switch system should support 802.1P classification and marking of packet using: <ul style="list-style-type: none"> a. CoS (Class of Service) b. DSCP (Differentiated Services Code Point)
7.2	Switch should support for different type of QoS features for real time traffic differential treatment using <ul style="list-style-type: none"> a. Weighted Random Early Detection b. Strict Priority Queuing
7.3	Switch should support to trust the QoS marking/priority settings of the end points as per the defined policy
9	Security
9.2	Switch should support control plane Protection from unnecessary or DoS traffic by control plane protection policy
9.4	Switch should support for external database for AAA using: <ul style="list-style-type: none"> a. TACACS+ b. RADIUS
9.6	Switch should support to restrict end hosts in the network. Secures the access to an access or trunk port based on MAC address. It limits the number of learned MAC addresses to deny MAC address flooding
5.10	Switch platform should support MAC Sec (802.1AE) in hardware
9.7	Switch should support for Role Based access control (RBAC) for restricting host level network access as per policy defined
9.10	Switch should support Spanning tree BPDU protection
10	Manageability
10.2	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail
10.3	Switch should provide remote login for administration using: <ul style="list-style-type: none"> a. Telnet b. SSHv2
10.4	Switch should support for capturing packets for identifying application performance using local and remote port mirroring for packet captures
10.5	Switch should support for management and monitoring status using different type of Industry standard NMS using: <ul style="list-style-type: none"> a. SNMP v1 and v2, SNMP v3 with Encryption
10.10	Switch should provide different privilege for login in to the system for monitoring and management
11.8	All relevant licenses for all the above features and scale should be quoted along with switch
11.9	Switch and optics should be from the same OEM



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Item no.2: Edge SAN Switch (General)

S.No.	Particulars
1	The switch should have complete non-blocking architecture with 48 ports in a single domain concurrently active at 16 Gbps full duplex and with no oversubscription.
2	The switch should support 2, 4, 8 and 16 Gbps capabilities.
3	Port licensing to start with 12 ports. Upgrade in 12 port license in incremental fashion.
4	The switch should be rack mountable in 1RU form factor
5	Performance wise it should be capable to deliver 768 Gbps of actual FC throughput with non-blocking architecture
6	The switch must be capable of creating multiple hardware-based isolated Virtual Fabric (ANSI T11) instances.
7	Each Virtual Fabric instance within the switch should be capable of being zoned like a typical SAN and maintains its own fabric services, zoning database, Name Servers and FSPF processes etc. for added scalability and resilience
8	Switch management, the management software must support both Fabric wide and Device level management without the additional purchase of software.
9	The switch must be able to load balance traffic through an aggregated link with Source ID and Destination ID. The support for load balancing utilizing the Exchange ID must also be supported.
10	Offered SAN switch shall support services such as Quality of Service (QoS) to help optimize application performance in consolidated, virtual environments. It should be possible to define high, medium and low priority QOS zones to expedite high-priority traffic
11	The switch using FSPF protocol, the switch must be able to load balance up to 16 equal cost paths across the SAN network
12	The switch should have USB port which should be able to provision the switch in addition to storing log files, firmware images and configuration

Item no.3: 16 Port IP based KVM Switch

S.No.	Particulars
1	16 Port IP based KVM Switch
2	High port density – RJ-45 connectors for up to 16 ports in a 1U housing
3	Monitor and control up to 16 computers on a single level
4	Simultaneously share access to one local console and one remote KVM over IP switches
5	Two 10/100/1000 Mbps NICs for redundant LAN or two IP operation
6	Up to 64 user accounts – up to 32 users simultaneously share the control
7	Supports multiplatform server environments: Windows, Mac, Sun, Linux and VT100 based serial devices
8	BIOS-level access
9	Laptop USB Console (LUC)
10	Supports PS/2, USB, Sun Legacy (13W3) and serial (RS-232) connectivity
11	Out-of-Band Access-Modem dial-in/dial out/dial back support
12	Blade server support
13	Firmware upgradeable
14	Dual Power Supply

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S.No.	Particulars
15	Support for 3rd party power distribution units (PDUs)
16	Audio enabled High video resolution - up to 1280 x 1024 @ 75Hz (50m) for local and remote sessions Video quality and video tolerance adjustable to optimize data transfer speed
17	Virtual Media support to map DVD-CD-ROMs and other storage media to a remote server Support DVD/CD drives, USB mass storage devices, PC hard drives and ISO images
18	Event logging and Windows-based Log Server support
19	Critical system event notification via SMTP email; SNMP trap and Syslog support
20	Supports adapter ID Function: Stores port information allowing administrators to relocate the servers to different ports, without having to re-configure the adapters and switches
21	Power Association enables the switch's ports to be associated with an PDUs power outlets for remote power management of the servers from the switch's interface
22	Security: Remote authentication support: RADIUS, LDAP, LDAPS, and MS Active Directory Supports TLS 1.2 data encryption and RSA 2048-bit certificates to secure users log in from browser Flexible encryption design to choose any combination of 56-bit DES, 168-bit 3DES, 256-bit AES, 128-bit RC4, or Random for independent KB/Mouse, video, and virtual media data encryption IP/MAC Filter for enhanced security protection
23	Configurable user and group permissions for server access and control Automated CSR creation utility and third-party CA certificate authentication
24	Manage browser access methods (Browser, http, https)

Item no.4: Network Management System (General)

S.No.	Particulars
1	Simple licensing (if possible no add-ons and easy upgrade possibilities)
2	Different language options in the product itself (at least in English)
3	Availability of free product trial
4	The OEM Should be in the business for a minimum of 15 years and have a Global presence in the field of network monitoring tools.
5	The OEM must be listed in Gartner people choice award for 2020
System Architecture	
6	Supported Operating Systems: • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 • Microsoft Windows Server 2012 R2 64 Bits • Microsoft Windows Server 2012 64 Bits • Microsoft Windows 10 32/64 Bits • Microsoft Windows 8.1 64 Bits • Microsoft Windows 8 32/64 Bits • Microsoft Windows 7 32/64 Bits • Microsoft Windows Server 2008 R2 64 Bits
7	Agentless (solution should work agentless at least in a local network)
8	Remote site monitoring (possibility to monitor remotely located networks)
9	Auto discovery option for easy installation
10	User interfaces: • Web interface supporting common browsers • Desktop Client

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	<ul style="list-style-type: none"> Mobile Applications for Android and iOS
11	Database for storing monitoring data
12	Monitoring data should be stored for at least 1 year in raw format
13	Data export (possibility to export current and historic data in serviceable formats (e.g. CSV/XML))
14	Provide API for data integration purpose
15	High availability (failover or cluster architecture)
16	Providing maintenance windows option
17	Built-in ticketing system
18	Support of IPv6
19	Support of in-depth customizations
	Security
20	Web server security <ul style="list-style-type: none"> Web server should clean all GET or POST parameters Support HTTPS secure communication (Encryption TLS , SSL) Web server should check user accounts, group membership and access rights
21	User accounts <ul style="list-style-type: none"> User Accounts need to have a password Password should meet certain minimum requirements Password should be stored encrypted Password should not be logged Different user rights Automatic logout
22	SQL injection attacks need to be avoided
	Reporting
23	Built-in reporting environment
24	Ad-hoc reporting
25	Periodic reporting with flexible scheduling
26	Pre-defined reports/report templates
29	Send report via email (in HTML and PDF format)
30	Different charts (Table and Graphs)
31	SLA report
	Alarming and Notifications
32	Setting individual thresholds and alarming based on specified limits
33	Real-time notification
34	Notifications: <ul style="list-style-type: none"> Push notification on Android and iOS devices Send Email SMS / Pager Message / Amazon Simple Notification Service (SNS) Message Microsoft Teams Message / Slack Message Add Entry to Event Log Syslog Message SNMP Trap Execute HTTP Action Execute Program Create a Ticket Audio Notification MQTT Notifications
35	Dependencies to avoid alarm flood
36	Information about devices with equivalent behaviour patterns
37	
38	Dashboards and Management View
39	Individual dashboard design
40	High-level overview

41	Drill-down function	
42	Integration of 3rd party information	
43	Business Process view	
44	Supported Systems	
45	Windows	
46	Unix/Linux/MacOS	
47	Virtualization: <ul style="list-style-type: none"> • Citrix Xen • VMware • Microsoft Hyper-V • Docker Container 	
48	Cloud Integrations: <ul style="list-style-type: none"> • AWS • Microsoft Office 365 	
49	Supported Protocols and Methods	
50	ICMP/Ping, SNMP, WMI, HTTP/HTTPS, SSH, MQTT	
51	POP3, SMTP, IMAP	
52	FTP, TFTP, SFTP	
53	Windows Performance counter	
54	Network Packet Sniffing	
55	Flows (NetFlow, sFlow, jFlow, IPFIX)	
56	IPMI	
	Performance Indicators	
57	System availability/Uptime	
58	Network bandwidth/traffic	
59	Speed/Performance	
60	CPU Usage	
61	Disk Usage	
62	Memory Usage	
63	Hardware System Health	
64	VoIP and QoS	
65	Ping and HTTP availability	
66	System Characteristics: Possibility to retrieve information on monitored devices (hardware, software, processes, etc.)	
	Pre-defined test setup for different vendor devices	
67	Networking Monitoring: Cisco Juniper Sonicwall	
68	Storage Monitoring: Buffalo Dell Fujitsu HP/HPE IBM System Lenovo NetApp Nutanix QNAP Synology	
69	UPS and Environmental Monitoring: APC Jacarta	

	Poseidon	
Pre-defined test setup for application monitoring		
70	Webserver: <ul style="list-style-type: none">• Microsoft IIS• Apache	
71	Mail Server: <ul style="list-style-type: none">• Microsoft Exchange• IMAP• POP3• SMTP	
72	Databases: <ul style="list-style-type: none">• Microsoft SQL• MySQL• Oracle• PostgreSQL	
73	Windows Security Centre	
74	Microsoft SharePoint FTP Server Active Directory	
Pre-defined test setup for cloud-based application monitoring		
75	Amazon CloudWatch (Amazon Web Services)	
76	Amazon Cost (Amazon Web Services)	
77	Dropbox	
78	GitLab	
79	Google Analytics	
80	Google Drive	
81	Microsoft 365 Service Status	
82	Microsoft OneDrive	
83	Zoom Service Status	
Monitoring customization		
84	Possibility to run customizable, self-written tests	
85	Monitoring devices via custom MIB files	
86	Possibility to query API endpoints	
Smart Setup		
87	Detection of breaching average values	
88	Recommendation of individual monitoring setup based on the existing setup	
Service and Support		
Requirement		
89	Assistance from Sales Expert Team	
90	Email Support for Technical Requests	
91	Documentation in English	
92	Online support and training	
93	Software maintenance	

Item no. 5 & 6: Virtualization / Cloud Solution

S.No.	Particulars
1	The solution should provide a Virtualization layer that sits directly on the bare metal server hardware with no dependence on a general purpose OS for greater reliability and security and positioned as Leaders in the Gartner's Magic Quadrant or Forrester for last published report.
2	Virtualization solution should have heterogeneous support for guest Operating systems like Windows client, Windows Server, Linux (at least Red Hat, SUSE, Oracle Linux, Ubuntu and CentOS, Solaris x86)
3	The solution should be able to boot from iSCSI, FCoE, and Fibre Channel SAN

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4	The solution should integrate with NAS, FC, FCoE and iSCSI SAN and infrastructure from leading vendors leveraging high performance shared storage to centralize virtual machine file storage for greater manageability, flexibility and availability
5	The solution should provide special integration with Storage API's providing integration with supported third-party data protection, multi-pathing and disk array solutions.
6	The solution should have containers fully integrated into the kernel allowing for all the native benefits of hypervisor to apply directly to container objects including security, management, high availability and monitoring
7	The solution should provide the cross-cloud Cold and Hot Migration to further enhance the ease of management across and enabling a seamless and non-disruptive hybrid cloud experience for customers.
8	Solution should provide encrypted live migration capability across different virtualization management instances and versions and also provides seamless migration of individual VMs across different processor generation between different data-centres or from an on-premises data-centre to the cloud and back, across clusters and during power cycles.
9	The solution should have the ability to live migrate VM files from one storage array to another without any VM downtime. Support this migration from one storage protocol to another (ex. FC, iSCSI, DAS)
10	The solution should have High Availability capabilities for the virtual machines in the sense if in case one server fails all the Virtual machines running on that server should be able to migrate to another physical server running same. The feature should be independent of Operating System Clustering and should work with FC, iSCSI SAN and NAS shared storage.
11	The solution should have the provision to provide zero downtime, zero data loss and continuous availability for the applications running in virtual machines in the event of physical host failure, without the cost and complexity of traditional hardware or software clustering solutions.
12	The solution should provide in-built Replication capability which will enable efficient array-agnostic replication of virtual machine data over the LAN or WAN. This Replication should simplify management enabling replication at the virtual machine level and enabling RPOs as low as 5 minutes.
13	The solution should provide capabilities of Hot Add (CPU, Memory & devices) to virtual machines when needed, without disruption or downtime in working for both windows and Linux based VMs
14	The solution should provide secure boot for protection for both the hypervisor and guest operating system by ensuring images have not been tampered with and preventing loading of unauthorized components
15	The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, antimalware solutions without the need for agents inside the virtual machines.
16	The solution should provide hardware as well as non-hardware accelerated 3D graphics to run Basic 3D applications in virtual machines with suspend and resume capabilities for vGPUs, to improve host lifecycle management and reduce end-user disruption. Support initial placement and HA of virtual machines equipped with a pass through PCIe device or a NVIDIA vGPU for AI/ML applications.
17	The solution should support enforcing security for virtual machines at the Ethernet layer. Disallow promiscuous mode, sniffing of network traffic, MAC address changes, and forged source MAC transmits.
18	The solution should allow configuring each virtual machine with one or more virtual NICs. Each of those network interfaces can have its own IP address and even its own MAC address, must support NIC teaming for load sharing and redundancy.

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19	Virtualization manager should be highly available with out of box HA without any dependency on external shared storage or load balancer.
20	Hypervisor should have capability similar of Virtual Volumes which enables abstraction for external storage (SAN and NAS) devices making them Virtualization aware.
21	The solution should continuously monitor utilization across virtual machines and should intelligently allocate available resources among virtual machines
22	The solution should provide enhanced visibility into storage throughput and latency of hosts and virtual machines that can help in troubleshooting storage performance issues.
23	The solution should be able to dynamically allocate and balance computing capacity across collections of hardware resources aggregated into one unified resource pool with optional control over movement of virtual machines like restricting VMs to run on selected physical hosts.
24	It should provide the ability to set constraints that restrict placement of a virtual machine to a subset of hosts in a cluster and to keep virtual machines paired or separated.
25	The solution should provide proactive High availability capability that utilizes server health information and migrates VMs from degraded hosts before problem occurs
26	The solution should provide abilities to offload specific storage operations to compliant storage hardware thereby performing these operations faster and consuming less CPU, memory, and storage fabric bandwidth
27	Virtualization software should provide VM-level encryption protects unauthorized data access both at-rest and in-motion The solution should have the unified visibility and manageability across an on-premises hypervisor environment running on one version and a hypervisor running in public cloud environment running on a different version of hypervisor. This will not force the customer to constantly update and upgrade their on-premises hypervisor environment.
28	The solution should have single reboot to dramatically reduce the upgrade times by skipping a host reset and also help to reduce patching and upgrade times by rebooting the hypervisor without rebooting the physical host, skipping time-consuming hardware initialization
29	The solution should provide in-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details
30	The solution should provide a "Latency Sensitivity" setting in a VM that can be tuned to help reduce virtual machine latency. When the Latency sensitivity is set to high the hypervisor will try to reduce latency in the virtual machine by reserving memory, dedicating CPU cores and disabling network features that are prone to high latency.
31	Virtualization software should support embedding Kubernetes in the control plane of hypervisor for unified control of compute, network and storage resources to run both containers and virtual machines on the same platform. Support to provision persistent disks for use with containers, Kubernetes and virtual machines. and support running containers directly on the hypervisor for improved security, performance, and manageability
32	Should support unified visibility and management for Kubernetes clusters, containers and virtual machines
33	The solution should also natively have feature to enable live migration of virtual machines between servers in a cluster, across clusters as well as as long distances from one site to another (up to 100 milliseconds round trip time) with no disruption to users or loss of services, eliminating the need to schedule application

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35	downtime or business downtime. The solution should be able to create a cluster out of multiple storage data stores and automate load balancing by using storage characteristics to determine the best place for a virtual machine's data to reside, both when it is created and when it is used over time.
36	The solution should provide solution to automate and simplify the task of managing hypervisor installation, configuration and upgrade on multiple physical servers.
37	OEM should provide direct support 24x7x365 with unlimited incident support (Telephonic, Web & Email) and 30mins or less response time including the unlimited upgrades and updates.

Item no. 7: Virtual Application Load Balancer (General)

S.No.	Particulars
1	OEM must be present in latest Gartner's Leaders Magic Quadrant for ADC solution
2	The proposed solution should provide minimum 6Gbps of throughput
3	The proposed solution should provide: a). Layer 4 Connection per second: 250,000 b). Layer 7 Request per second: 700,000 c). SSL Connection per second: 5000
4	The solution shall be able to run both IPv4 & IPv6 simultaneously from day-one
5	The solution shall support TCP and UDP applications
6	Solution shall be configured in High Availability Mode by using Standard VRRP and in case of failure of one of the appliance; the other appliance shall serve all the requests without any disruption or degradation in overall performance
7	Should support Local Application Switching, Server load Balancing, HTTP, TCP Multiplexing, Compression, Caching, TCP Optimization, Filter-based Load Balancing, Content-based Load Balancing, Persistency, HTTP Content Modifications
8	Solution must have Dynamic routing protocols like OSPF, RIP1, RIP2, BGP
9	Following Server Load Balancing Topologies should be supported: • Virtual Matrix Architecture • Client Network Address Translation (Proxy IP) • Mapping Ports • Direct Server Return • One Arm Topology Application • Direct Access Mode • Assigning Multiple IP Addresses • Immediate and Delayed Binding • IP Address Ranges Using imask
10	The SLB should support the below metrics: — Minimum Misses, — Hash, — Persistent Hash, — Tunable Hash, — Weighted Hash, — Least Connections, — Least Connections Per Service, — Round-Robin, — Response Time, — Bandwidth,
11	Should have DNS SEC Global Server load Balancing functionality.
12	Should support the Application Performance Monitoring feature and should

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	<p>support the following:</p> <ol style="list-style-type: none"> 1) Real user monitoring for any client with no agent software. 2) Centralized monitoring of performance across Local and Data centre. 3) Measurement of real users and their actual transactions including errors – eliminating manual scripting of synthetic transactions 4) Diagram allowing to visually see which transactions breach SLA 5) Breaking down the measurements by specific application, location or transaction 6) SLA is user-defined – allowing full control over application 7) Ability to see which transactions were not completed due to errors.
13	<p>Should have Proximity that enables to determine which the fastest path available</p> <p>Should support Web Performance Optimization feature that should employ different acceleration treatments for different application and browser scenarios:</p> <ol style="list-style-type: none"> a) Simplifying large, complex web pages. b) Caching c) Accelerate entire web transaction d) Third-Party timing and SLAs e) Content Minification f) Acceleration for mobile devices--Mobile Caching, Image resizing, Touch-to-click conversion
14	<p>Should be accessed through the below:</p> <ul style="list-style-type: none"> • Using the CLI • Using SNMP • REST API • Using the Web Based Management
15	

Item no. 8: Purpose-built Backup Appliance

S.No.	Particulars
1	The Proposed Purpose Build Backup Appliance (PBBA)/solution shall be proposed with minimum 100TB usable capacity and Scale more up to 200 TB.
2	The proposed PBBA device/solution shall support Deduplication Disk. i.e. providing multiple types of workloads (backup, replication) and interfaces (NFS, CIFS, VTL, OST) to a single deduplication system.
3	The proposed device shall have the capability to deliver selective restore from disk library itself.
4	The proposed device shall have integrated de-duplication license for the suggested capacity for Deduplication disk as well as NAS and shall have support for replication to remote location in a WAN optimization mode.
5	The proposed device shall support intelligence to understand Source based and target based (at client application level, backup server level and media server level) de-duplication so that only unique - non duplicated data is copied to the proposed device.
6	The proposed device/solution have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance management console seamlessly. Consider license/hardware if required.
7	The proposed device shall have a minimum of 4 * 1G Ethernet, 2 * 8/16 Gbps Fibre Channel and 2* 10 Gbps Ethernet connections fully populated.
8	The proposed disk-based backup device shall also support encryption functionality. To ensure data security, the solution should support data encryption in flight and at rest. The solution should offer data encryption in the physical tape library.
9	The proposed backup software for the solution should be in Leader's quadrant of Gartner Enterprise Backup Software Recovery Report in last 3 years.
10	The proposed device shall support rated write performance of minimum 10 TB per



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	hour and when enabled with source level de-duplication, shall have rated performance of at least 30 TB/hr.
11	Proposed Backup solution must provide a "turnkey" fully integrated backup solution (Backup Appliance and Backup Software).
12	The Proposed Backup solution must provide Management/ solution of the backup software and dedupe appliance from the GUI console.
13	The proposed Purpose Build Backup Disk Appliance/solution must be capable to act as a Backup Controller/Backup Server and Data Mover/Media Server simultaneously.
14	The Proposed Backup Disk Appliance license should not be tied to the storage device. This means if another device is installed at the DR site, then the appliance will not need separate dedupe license
15	The proposed device should have inbuilt WAN failures capabilities and also be tolerant to complete or intermittent network failure or TCP packet drops.
16	The proposed backup appliance has built-in data security component against malicious threats and attacks.
17	Backup device/solution should be proposed along with integrated Backup Software License for 100TB front-end data capacity with Operating System (i.e.) Windows Server 2008 and all higher versions, Redhat Linux Ver 5.x and all higher versions and Database backup agents for MS-SQL 2008 and all higher versions, Postgres 8.x and all higher version and MYSQL 5.x and all higher versions included.
18	5 years OEM comprehensive Onsite Warranty and support for both hardware and software (24x7)

Item no. 9: Unified Storage 300TB (200 TB SSD plus 100 TB SAS)

S.No.	Features	Particulars
1.	Solution Type	<p>Bidder is expected to provide Unified Storage solution should have block and file access with host connectivity for FC, iSCSI, CIFS and NFS.</p> <p>Storage should have the capability to scale up. The unified storage solution must be dedicated appliance with specifically optimized OS to provide both SAN and NAS functionalities</p> <p>The NAS capability of storage should be provided through purpose built appliance optimized for NAS operations in HA mode.</p>
2.	Storage Size and tiring	<p>Storage should be supplied with 300 TB(200TB SSD and 100TB SAS HDD) of usable space upgradable up to 1 PB excluding all overhead configuration like RAID (RAID 6 or equivalent) configuration formatting, and hot spare disk.</p> <p>200TB of total capacity is provide with SSD Disk drives (Each SSD capacity up to 4 TB) and rest of the 100TB capacity with SAS Disk drives (Each SAS capacity up to 2.4 TB) Should support latest technology SSD, SAS, NL- SAS/SATA drives.</p>

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3.	Hardware Platform	<p>Rack mounted form-factor.</p> <p>Modular design to support disk drives expansion.</p> <p>8 ports for Backend disk connectivity scalable up to 16 ports. Each port should have min. 4 lanes @ 12 Gbps/lane. OR 4 ports with aggregate bandwidth of 192Gbps scalable to 384Gbps.</p>
4.	Controllers	<p>Unified Storage controller nodes should have active-active and failover capabilities</p> <p>Storage Should have 512 TB on-board Protected DRAM cache across Controllers. Same should be upgradable up to 2TB on-board Protected DRAM Cache or higher across the controllers. System memory/addition HDD will not be allowed for any kind of cache operation.</p> <p>The controllers /Storage nodes should be upgradable seamlessly, without any disruptions/downtime to production workflow for performance, capacity enhancement and software/firmware upgrade. Hardware based data replication at the array controller level.</p>
5.	Ports (per controller)	8*16 Gbps FC, 4*10 Gbps (SFP+SR), 2 FCIP/replication port per controller.
6.	Operating System and Server Virtualization Support	<p>The storage solution should support all latest operating system and cluster environments.</p> <p>The storage solution should support virtual infrastructure like VMware/ Hyper-V/ KVM etc. Should have capabilities for booting VMs from the SAN.</p> <p>Should be supplied with virtualization aware APIs for provisioning and managing the storage array from the virtual infrastructure.</p>
7.	Protocol Support	Storage should support protocol – FC, iSCSI, NFS and CIFS
8.	Management Protocol Support	SNMP or equivalent, LDAP and NTP Synchronization.
9.	RAID support	Should support hardware industry standard RAID levels (5/6) or equivalent.
10.	Multi-pathing and SAN Security	<p>The multi-pathing software should provide multi- pathing from all leading OEM's.</p> <p>The Storage should provide provision LUN Masking and SAN Security.</p>
11.	Redundancy and High Availability	<p>The Storage System should be able to protect the data Against single point of failure with respect to controller, disks, cache, connectivity interfaces, fans and power supplies.</p> <p>Storage should support non-disruptive online microcode upgrades, component replacement of controller disks, cache, fan, power supply etc.</p> <p>Multiple redundant path within the storage subsystem should be easily configurable (active- active or active- passive).</p>

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12.	Management software	<p>All the necessary software to configure and manage the storage space, RAID configuration, logical drives allocation, snapshots etc.</p> <p>Single Command and GUI and Integrated Web Console for entire storage system for configuration, managing and administration of block and file storage and associated functionalities including deployment, automation, provisioning, and protection and monitoring management Solution Should offer real time performance monitoring tools giving information on CPU utilization, volume throughput, I/O rate and latency report of at least for past 1month with minimum 5-minute interval.</p> <p>Should provide the functionality of proactive monitoring of Disk drive and Storage system for all possible disk failures.</p> <p>Should be able to create instantaneous or Point in Time snapshot copies of volumes which can be either a full clone or incremental snapshot of the volumes.</p>
13.	Supported Software and licenses from day one for the total configured capacity	<p>Thin Provisioning, inline Compression on SSD, inline de-duplication, Snapshot, restore snapshot, Cloning and application & VM aware backup.</p> <p>Asynchronous and Synchronous remote replication and remote mirroring for Disaster Recovery for both File and Block.</p> <p>Quality of Service Software for IOPS/Response Time and bandwidth.</p>
14.	Data Protection	The storage array must have complete cache protection Using mechanism like mirroring/ de- staging/coherency. Also provide complete cache data protection with battery backup for up to minimum 48 hours. The data shall not be lost in the case of power failure.
15.	Other	All required cable, passive component and connectors to be supplied.
16.	Quality	OEM must be Leader in Gartner Magic Quadrant for Storage from last 3 years.
17.	Warranty and Support	5 years OEM comprehensive Onsite Warranty and 24*7 support for both hardware and software.

The IFMS project is developed and maintained by National Informatics Centre (NIC) and accordingly the required hardware is suggested by NIC.

End of Document

