



DIRECTORATE GENERAL OF HYDROCARBONS

(Ministry of Petroleum & Natural Gas, Government of India)

Corrigendum No. 1 to tender no. MM-11012/5/2019-DGH/ENQ-165 for Supply, installation, and commissioning of IT hardware like servers, storage, backup tape library etc along with backup software at DGH Noida

This corrigendum is issued to amend technical specifications, terms & conditions and to provide DGH's response to pre-bid queries.

A: Amendments				
Sino	Pg no	Reference	Existing Clause/ Description	Amended Clause/ Clarification/ New Clause
1	49	1. Server for Web Applications	8. RAID Controller:On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	"RAID Controller:On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache"
2	50	2. Server for Management/ Backup	8. RAID Controller:On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	"8. RAID Controller:On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache"
3	51	3. SAN Storage	2. Capacity: . Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or equivalent providing protection against 2-disk failure . RAID configuration must be Hardware based RAID only	"2. Capacity: . Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 or equivalent providing protection against 2-disk failure . RAID configuration must be Hardware based RAID only"
4	51	3. SAN Storage	3. Drive Type: 1.2 TB Hot Swappable SAS 10K RPM SFF	Clarification -> SSD Drives will be acceptable.

5	51	3. SAN Storage	<p>4. Array Architecture :</p> <ul style="list-style-type: none"> . The array must be equipped with dual active controllers with automated I/O path failover. . Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion. . The storage system must be supplied with minimum 8 nos. 16 Gbps FC Host Ports. . The storage system must be supplied minimum 4 nos. SAS backend ports. . The SAN storage must support synchronous, asynchronous replication. 	<p>"4. Array Architecture :</p> <ul style="list-style-type: none"> . The array must be equipped with dual active controllers with automated I/O path failover. . Controllers shall be true active-active. . The storage system must be supplied with minimum 8 nos. 16 Gbps FC Host Ports. . The storage system must be supplied minimum 4 nos. SAS backend ports. . The SAN storage must support synchronous, asynchronous replication."
6	51	3. SAN Storage	6. Cache Capacity : 64 GB or higher per controller	"6. Cache Capacity : 64 GB or higher across controller"
7	51	3. SAN Storage	<p>9. Data Services:</p> <p>Offered Storage shall support data Snapshot, Thin provisioning, De-duplication, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include storage based replication software.</p>	Clarification->Any mode of deduplication process will be acceptable
8	51	3. SAN Storage	New Clause	"14. Offered Storage must provide data at rest encryption."
9	52	5. Network Switch	5. Network Switch – 2 No	"5.Network Switch - 1 No"
10	52	5. Network Switch	New Clause	"10. Min 2 Nos of 1 G SFP uplink ports. Bidder to provide i)Min 4 Nos of 1 G SFP Modules & ii) Min 20 meter long fiber patch cord to connect the switch to DGH's existing core switch". Out of the 4 SFP modules, 2 nos are to be used at the existing DGH's Core Switch."
11	52	7. Backup Software	12. The Backup software shall provide bare metal backup/ recovery of Windows & Linux Servers.	" The Backup software shall provide bare metal backup/ recovery of Windows Servers."

12	53	7. Backup Software	14. Necessary licenses should be provided from day 1.	"Bidder must provide capacity Base licenses for backup of 10TB of data with a provision to revise upwards to a maximum of 20 TB of data in future."
13	53	8. Backup Tape Library	8. Backup Tape Library – Qty 1 No; LTO 8 Media Cartridge – 20 Nos; Cleaning Cartridge – 2 Nos	"8. Backup Tape Library – Qty 1 No; LTO 7 Media Cartridge – 20 Nos; Cleaning Cartridge – 2 Nos
14	53	8. Backup Tape Library	3. Offered Tape Library shall provide 16 Gbps native FC connectivity.	"3. Offered Tape Library shall provide 8/16 Gbps native FC connectivity."
15	53	8. Backup Tape Library	8. The Tape Library should be fully populated with LTO8 tape cartridges (with labels and barcode) to the full capacity of the system supplied along with 2 cleaning cartridges. Rest of tape cartridges should also be barcoded and labelled.	"8. The Tape Library should be fully populated with LTO7 tape cartridges (with labels and barcode) to the full capacity of the system supplied along with 2 cleaning cartridges. Rest of tape cartridges should also be barcoded and labelled."
16	56	6. Delivery Time	1. The bidder will be required to supply the hardware within 8 weeks and complete necessary installation within 10 weeks from the date of LoA from DGH.	"1. The bidder will be required to supply the hardware within 10 weeks and complete necessary installation within 12 weeks from the date of LoA from DGH."

B: DGH's Response to Pre Bid queries

M/s Agmatel India Pvt Ltd

S.No	Clause No & Page No of Bid	Description	Request for Change	Bidder's Remarks	DGH's Response
1	Clause No 2.2, page no 45	Bidder, during the last five years, must have successfully carried out and completed either three similar work of value Rs 80,00,000 each or two similar work of value Rs 1,00,00,000 each or one similar work of value Rs 1,60,00,000. Documentary evidences like service contracts/ purchase orders / equivalent documents showing operations of such jobs along with completion Certificate(s) or payment certificates or any other documents which substantiate completion of the jobs, issued by the client(s) with contact details of the issuing person/organization (e-mail address, Phone Number, Fax number etc.) must be submitted along with the bid. "Similar Work" should be construed as supply, installation & commissioning of Servers and SAN storage similar	Request you to change the duration to 7 years instead of 5 years as that is the norm for all Govt/PSU tenders	For competitive and maximum participation	No Change
2	Server specs pt no 8, page no 49 & Server specs pt no 8, page no 50	On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache	All OEM Participation	Clause to be read as "On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache". Refer Amendments
3	Backup Software – Qty 1 No, page no 53	Backup Software – Qty 1 No, page no 53	Please clarify the quantity of App , DB & Total VM instances or Front end capacity of Backup software required	It will help to size and design solution in better way	Sno#14 of "Item 7.Backup Software Qty 1 No" to be amended as "Bidder must provide capacity Base licenses for backup of 10TB of data with a provision to revise upwards to a maximum of 20 TB of data in future."

4	SAN Storage – Qty 1 No, page no 50, point no 4	Array Architecture - The array must be equipped with dual active controllers with automated I/O path failover	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller.	It will give more scalability of performance and scalability for future investment protection.	No Change
5	SAN Storage – Qty 1 No, page no 51, point no 6	Cache Capacity - 64 GB or higher per controller	64 GB or higher DRAM Protected Cache across controllers	64GB Per controller is OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Clause to be read as "Cache Capacity - 64 GB or higher across controller" Refer amendments
6	D, Table A, Technical Specs of Server for web Application, Point No. 8 at page no. 49	On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	Kindly amend as 4GB NV Cache or 4GB/8GB	OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Clause to be read as "On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache" Refer amendments
7	D, Table A, Technical Specs of Server for Management, Point No. 8 at page no. 50	On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	Kindly amend as 4GB NV Cache or 4GB/8GB	OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Clause to be read as "On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache" Refer amendments

8	D, Technical Specs of SAN Storage, Point No. 4 at page no. 51	The array must be equipped with dual active controllers with automated I/O path failover.	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller.	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller . It will give more scalability of performance and scalability for future investment protection.	No Change
9	D, Technical Specs of SAN Storage, Point No. 6 at page no. 51	64 GB or higher per controller	64 GB or higher DRAM Protected Cache across controllers	64GB Per controller is OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Clause to be read as "Cache Capacity - 64 GB or higher across controller"Refer amendments
10	Backup Software at page no. 53			Please clarify the quantity of Backup software license required. It will help to size and design solution in better and competitive way.	Sino#14 of "Item 7.Backup Software Qty 1 No" to be amended as "Bidder must provide capacity Base licenses for backup of 10TB of data with a provision to revise upwards to a maximum of 20 TB of data in future."

M/s DigiTech Computer

S. No.	Section/Clause No	Page No	Parameter	RFP Description	Remarks/Queries	Request for Changes	DGH's Response
1	D, Table A, Technical Specs of Server for web Application, Point No. 8	49	RAID Controller	On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Kindly amend as 4GB NV Cache or 4GB/8GB	Clause to be read as "On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache" Refer amendments

2	D, Table A, Technical Specs of Server for Management, Point No. 8	50	RAID Controller	On-board or PCI Express Slot hardware RAID controller with min 8GB NV Cache	OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Kindly amend as 4GB NV Cache or 4GB/8GB	Clause to be read as "On-board or PCI Express Slot hardware RAID controller with min 4GB NV Cache" Refer amendments
3	D, Technical Specs of SAN Storage, Point No. 4	51	Array Architecture	The array must be equipped with dual active controllers with automated I/O path failover.	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller . It will give more scalability of performance and scalability for future investment protection.	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller.	No Change
4	D, Technical Specs of SAN Storage, Point No. 6	51	Cache Capacity	64 GB or higher per controller	64GB Per controller is OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	64 GB or higher DRAM Protected Cache across controllers	Clause to be read as "Cache Capacity - 64 GB or higher across controller"Refer amendments

5	Backup Software	53			Please clarify the quantity of Backup software license required. It will help to size and design solution in better and compctetive way.		Sln#14 of "Item 7.Backup Software Qty 1 No" to be amended as "Bidder must provide capacity Base licenses for backup of 10TB of data with a provision to revise upwards to a maximum of 20 TB of data in future."
---	-----------------	----	--	--	--	--	--

M/s. Smart Planet IT Solutions

Tnder Reference	Tender clause		Request for Change	Bidder's Remarks	DGH's Response
Page no 50 - Annexure- IV - D - SOW/TechnicalSpe cifications - Table A- 3- SAN Storage - Point no 4	Array Architecture	The array must be equipped with dual active controllers with automated I/O path failover.	The array must be equipped with dual active controllers with automated I/O path failover and upgradable to 4 controller.	It will give more scalability of performance and scalability for future investment protection.	No Change

Page no 50 - Annexure- IV - D - Annexure- IV - SOW/Technical Specifications - 4- Table A 3- SAN Storage - Point no 6	Cache Capacity	64 GB or higher per controller	64 GB or higher DRAM Protected Cache across controllers	64GB Per controller is OEM specific clause, which will restrict other OEM/Bidder to participate in tender.	Clause to be read as "Cache Capacity - 64 GB or higher across controller" Refer amendments
Page no 56 - Clause 6	Payment Schedule	The remaining 10 % payment will be released @2.5% per annum after successful completion of warranty services at the end of each year.	This payment condition need to be removed as there is already PBG of 7.5% of total order value valid for a period of 02 months beyond warranty period	Being an MSME , we request to have on of the payment condition altered - either PBG of 7.5% of total order value is kept or 10% payment amount is held for the warranty period.	No Change
Page no 53 - 7. Backup Software – Qty 1 No			Please clarify the quantity of App , DB & Total VM instances or Front end capacity of Backup software required ?	It will help to size and design solution in better way.	Sln#14 of "Item 7.Backup Software Qty 1 No" to be amended as "Bidder must provide capacity Base licenses for backup of 10TB of data with a provision to revise upwards to a maximum of 20 TB of data in future."

M/s. Dell EMC

SAN Storage

S.No.	Categories	Specification	Queries/Clarification	Suggested Clause	Bidder's Justification/Remarks	DGH's Response
1	Capacity	Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or equivalent providing protection against 2-disk failure	SAS Drives are quite stable drives. Request you to consider RAID 5 with extra hot spares and allow RAID 6(12D+2P) or RAID (10D+2P)	Offered Unified Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or (10D+2P) or (12D+2P) providing protection against 2-disk failure	Today most of the storage offer block and file services, any customer would like to maximum ROI and therefore demand more features from same system. We request DGH to consider as earlier system deployed is also a unified storage.	Clause to be read as "Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 or equivalent providing protection against 2-disk failure." Refer amendments
2	Drive Type	1.2 TB Hot Swappable SAS 10K RPM SFF Disk Drive	For 60TB on RAID 6 using 1.2TB 80 nos. of disks would be required. Instead we use SSD disks using RAID 6 (12D+2P) we would need 28 disks only. This not only reduce space and power but reduce failure probability. RAID rebuild is 10 times faster using SSD as only data stored in blocks gets rebuild not the whole drive	1.92TB Hotplug disks or higher		SSDs will be acceptable

3	Architecture	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion.	Please explain what is symmetrical fashion	Controllers shall be true active-active.		Clause to be read as "Controllers shall be true active-active". Refer amendments
4	Data Services	Offered Storage shall support data Snapshot, Thin provisioning, Deduplication, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include storage based replication software.		Offered Storage shall support Pointer based snaps with simple space reclaim and low IO impact, Thin provisioning, Inline - Deduplication and Compression, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include storage based replication software.	Deduplication and compression must be inline to reduce the load on controllers and should not be a post write process. This will greatly hamper production environment when executed specially using SAS Disks. We already suggested to use SSD.	Any mode of deduplication process will be acceptable

5	OS Support	Industry leading Operating System platforms including Windows Server 2008, 2012, 2016 & 2019, RHEL-5, VMware, Hyper-V.		Industry leading Operating System platforms including Windows Server 2008, 2012, 2016 & 2019, RHEL-5, VMware with FC and NFS datastores and Vvols, Hyper-V.	VMWare offers to provision datastores using FC and NFS connectivity. Not every system has FC connectivity and to maximise the efficiency 10Gb ethernet can be used as VMWare host via NFS. We request you to please accept the suggested change.	No Change
6	Data Services	Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED with internal or external key management		Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED	DGH Data is critical and DGH itself has entrusted this during past requirement. It would be prudent to get encryption to safeguard the information. We request you to please include this clause	Offered Storage must provide data at rest encryption.

Backup Software					
7	The backup software should be Windows based. It must be fully compatible with the storage systems and tape library that are part of the tender	Why the backup software should be windows based.	The backup software should be Linux based or provided as a hardened appliance. It must be fully compatible with the storage systems and tape library that are part of the tender	DGH is holding critical data of nation and it is also well known fact that Windows based system are more susceptible to attacks including ransomware attacks. Keeping Backup in such a fragile environment is not recommended as its absolute whole purpose of keeping a copy of data as backup. We request DGH to consider only linux/unix OS or a hardened appliance be supplied.	No Change.
8	The software should be capable of performing Block/RDBMS Level and File level data backup / restore. The software must provide functionality for disk-to-tape, block/file based full/incremental backup, vaulting of tapes offline, etc.	Please specify the RDBS details	The software should be capable of performing Block and Oracle, SQL, DB2, Level and Windows and Linux File level data backup and restore including Centos. The software must provide functionality for simultaneously backing up data from disk-to-tape via FC, NFS and NDMP protocols for file based full/incremental backup, vaulting of tapes offline, etc.	Please mention the application and if possible editions/version to provide clarity. It is an important functionality for any backup software to provide restoration capabilities while backing up data from other sources	RDBMS include Oracle 12c
9	The Backup software should support Hyper-V virtualization servers	Why only Hyper-V virtualisation has been	The Backup software should support Hyper-V virtualization and VMWare servers	Both the virtualisation stacks are leading and software provided must not be limited to only backing up one stack. We request DGH to include VMWare also	No Change

10	The Backup software shall provide bare metal backup/ recovery of Windows & Linux Servers.	Please mention no. of server of each type of OS				The clause to be read as " The Backup software shall provide bare metal backup/ recovery of 4 nos of Windows Servers.". Refer amendments
11	Backup and Restore Window		Backup and Restor window available is 6 hours	We request DGH to speify this important information as without this the entire purpose of backup solution gets defeated. DGH may change the duration mentioned in clause to provide clarity.		Not Agreed
12	Media Servers		Any extra hardware and software if required to meet above creteria of backup and restore window must be supplied	Different OEM may have different media server or other hardware requirement to meet the SLA.		Not Agreed

Tape Library

13		Offered Tape Library shall provide 16 Gbps native FC connectivity.		Offered Tape Library shall provide 8/16 Gbps native FC connectivity.	Our Library have 8 Gbps native FC connectivity.	Clause to be read as "Offered Tape Library shall provide 8/16 Gbps native FC connectivity.". Refer amendments
----	--	--	--	--	---	---

M/s. Proactive Data Systems Pvt. Ltd.	
--	--

SAN Storage						
S.No.	Categories	Specification	Queries/Clarification	Suggested Clause	Bidder's Justification/Remarks	DGH's Response
1	Capacity	Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or equivalent providing protection against 2-disk failure	SAS Drives are quite stable drives. Request you to consider RAID 5 with extra hot spares and allow RAID 6(12D+2P) or RAID (10D+2P)	Offered Unified Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or (10D+2P) or (12D+2P) providing protection against 2-disk failure	Today most of the storage offer block and file services, any customer would like to maximum ROI and therefore demand more features from same system. We request DGH to consider as earlier system deployed is also a unified storage.	Clause to be read as "Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 or equivalent providing protection against 2-disk failure." Refer amendments
2	Drive Type	1.2 TB Hot Swappable SAS 10K RPM SFF Disk Drive	<p>For 60TB on RAID 6 using 1.2TB 80 nos. of disks would be required. Instead we use SSD disks using RAID 6 (12D+2P) we would need 28 disks only. This not only reduce space and power but reduce failure probability.</p> <p>RAID rebuild is 10 times faster using SSD as only data stored in blocks gets rebuild not the whole drive</p>	1.92TB Hotplug disks or higher		SSDs will be acceptable

3	Architecture	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion.	Please explain what is symmetrical fashion	Controllers shall be true active-active.		Clause to be read as "Controllers shall be true active-active". Refer amendments
4	Data Services	Offered Storage shall support data Snapshot, Thin provisioning, Deduplication, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include storage based replication software.		Offered Storage shall support Pointer based snaps with simple space reclaim and low IO impact, Thin provisioning, Inline - Deduplication and Compression, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include storage based replication software.	Deduplication and compression must be inline to reduce the load on controllers and should not be a post write process. This will greatly hamper production environment when executed specially using SAS Disks. We already suggested to use SSD.	Any mode of deduplication process will be acceptable

5	OS Support	Industry leading Operating System platforms including Windows Server 2008, 2012, 2016 & 2019, RHEL-5, VMware, Hyper-V.		Industry leading Operating System platforms including Windows Server 2008, 2012, 2016 & 2019, RHEL-5, VMware with FC and NFS datastores and Vvols, Hyper-V.	VMWare offers to provision datastores using FC and NFS connectivity. Not every system has FC connectivity and to maximise the efficiency 10Gb ethernet can be used as VMWare host via NFS. We request you to please accept the suggested change.	No Change	
6	Data Services	Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED with internal or external key management		Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED	DGH Data is critical and DGH itself has entrusted this during past requirement. It would be prudent to get encryption to safeguard the information. We request you to please include this clause	Offered Storage must provide data at rest encryption.	
Backup Software							

7	The backup software should be Windows based. It must be fully compatible with the storage systems and tape library that are part of the tender	Why the backup software should be w	The backup software should be Linux based or provided as a hardened appliance. It must be fully compatible with the storage systems and tape library that are part of the tender	DGH is holding critical data of nation and it is also well known fact that Windows based system are more susceptible to attacks including ransomware attacks. Keeping Backup in such a fragile environment is not recommended as its absolute whole purpose of keeping a copy of data as backup. We request DGH to consider only linux/unix OS or a hardened appliance be supplied.	No Change.	
8	The software should be capable of performing Block/RDBMS Level and File level data backup / restore. The software must provide functionality for disk-to-tape, block/file based full/incremental backup, vaulting of tapes offline, etc.	Please specify the RDBS details	The software should be capable of performing Block and Oracle, SQL, DB2, Level and Windows and Linux File level data backup and restore including Centos. The software must provide functionality for simultaneously backing up data from disk-to-tape via FC, NFS and NDMP protocols for file based full/incremental backup, vaulting of tapes offline, etc.	Please mention the application and if possible editions/version to provide clarity. It is an important functionality for any backup software to provide restoration capabilities while backing up data from other sources	RDBMS include Oracle 12c	
9	The Backup software should support Hyper-V virtualization servers	Why only Hyper-V virtualisation has be	The Backup software should support Hyper-V virtualization and VMWare servers	Both the virtualisation stacks are leading and software provided must not be limited to only backing up one stack. We request DGH to include VMWare also	No Change	

10	The Backup software shall provide bare metal backup/ recovery of Windows & Linux Servers.	Please mention no. of server of each type of OS				The clause to be read as " The Backup software shall provide bare metal backup/ recovery of 4 nos of Windows Servers.". Refer amendments
New Proposed Points						
11	Backup and Restore Window		Backup and Restor window available is 6 hours	We request DGH to speify this important information as without this the entire purpose of backup solution gets defeated. DGH may change the duration mentioned in clause to provide clarity.		Not Agreed
12	Media Servers		Any extra hardware and software if required to meet above creteria of backup and restore window must be supplied	Different OEM may have different media server or other hardware requirement to meet the SLA.		Not Agreed
	Tape Library					
13		Offered Tape Library shall provide 16 Gbps native FC connectivity.		Offered Tape Library shall provide 8/16 Gbps native FC connectivity.	Our Library have 8 Gbps native FC connectivity.	Clause to be read as "Offered Tape Library shall provide 8/16 Gbps native FC connectivity.. Refer amendments

M/s. Transtek Infoways Pvt. Ltd

SAN Storage

S.No.	Categories	Specification	Queries/Clarification	Suggested Clause	Bidder's Justification/Remarks	DGH's Response
1	Capacity	Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or equivalent providing protection against 2-disk failure	SAS Drives are quite stable drives. Request you to consider RAID 5 with extra hot spares and allow RAID 6(12D+2P) or RAID (10D+2P)	Offered Unified Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or (10D+2P) or (12D+2P) providing protection against 2-disk failure	Today most of the storage offer block and file services,any customer would like to maximum ROI and therefore demand more features from same system. We request DGH to consider as earlier system deployed is also a unified storage.	Clause to be read as "Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 or equivalent providing protection against 2-disk failure.". Refer amendments

2	Drive Type	1.2 TB Hot Swappable SAS 10K RPM SFF Disk Drive	<p>For 60TB on RAID 6 using 1.2TB 80 nos. of disks would be required. Instead we use SSD disks using RAID 6 (12D+2P) we would need 28 disks only. This not only reduce space and power but reduce failure probabilty.</p> <p>RAID rebuild is 10 times faster using SSD as only data stored in blocks gets rebuild not the whole drive</p>	1.92TB Hotplug disks or higher	SSDs will be acceptable
3	Architecture	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion.	Please explain what is symmetrical fashion	Controllers shall be true active-active.	Clause to be read as "Controllers shall be true active-active". Refer amendments

6	Data Services	Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED with internal or external key management		Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED	DGH Data is critical and DGH itself has entrusted this during past requirement. It would be prudent to get encryption to safeguard the information. We request you to please include this clause	Offered Storage must provide data at rest encryption.
---	---------------	---	--	--	--	---

Backup Software

7	The backup software should be Windows based. It must be fully compatible with the storage systems and tape library that are part of the tender	Why the backup software should be w	The backup software should be Linux based or provided as a hardened appliance. It must be fully compatible with the storage systems and tape library that are part of the tender	<p>DGH is holding critical data of nation and it is also well known fact that Windows based system are more suspeticle to attacks including ransomware attacks.</p> <p>Keeping Backup in such a fragile enviornment is not rrecommended as its absolve whole purpose of keeping a copy of data as backup. We request DGH to consider only linux/unix OS or a hardened appliance be supplied.</p>		No Change.
---	--	-------------------------------------	--	--	--	------------

11	Backup and Restore Window		Backup and Restor window available is 6 hours	We request DGH to speify this important information as without this the entire purpose of backup solution gets defeated. DGH may change the duration mentioned in clause to provide clarity.		Not Agreed
12	Media Servers		Any extra hardware and software if required to meet above creteria of backup and restore window must be supplied	Different OEM may have different media server or other hardware requirement to meet the SLA.		Not Agreed

Tape Library

13		Offered Tape Library shall provide 16 Gbps native FC connectivity.		Offered Tape Library shall provide 8/16 Gbps native FC connectivity.	Our Library have 8 Gbps native FC connectivity.	Clause to be read as "Offered Tape Library shall provide 8/16 Gbps native FC connectivity.". Refer amendments
----	--	--	--	--	---	---

M/s. Millennium Automation Private Ltd.

SAN Storage

S.No.	Categories	Specification	Queries/Clarification	Suggested Clause	Bidder's Justification/Remarks	DGH's Response

1	Capacity	Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or equivalent providing protection against 2-disk failure	SAS Drives are quite stable drives. Request you to consider RAID 5 with extra hot spares and allow RAID 6(12D+2P) or RAID (10D+2P)	Offered Unified Storage must be configured to provide usable capacity of 60 TB after RAID 6 (6D+2P) or (10D+2P) or (12D+2P) providing protection against 2-disk failure	Today most of the storage offer block and file services, any customer would like to maximum ROI and therefore demand more features from same system. We request DGH to consider as earlier system deployed is also a unified storage.	Clause to be read as "Offered Storage must be configured to provide usable capacity of 60 TB after RAID 6 or equivalent providing protection against 2-disk failure.". Refer amendments
2	Drive Type	1.2 TB Hot Swappable SAS 10K RPM SFF Disk Drive	For 60TB on RAID 6 using 1.2TB 80 nos. of disks would be required. Instead we use SSD disks using RAID 6 (12D+2P) we would need 28 disks only. This not only reduce space and power but reduce failure probability. RAID rebuild is 10 times faster than HDD	1.92TB Hotplug disks or higher		SSDs will be acceptable
3	Architecture	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion.	Please explain what is symmetrical fashion	Controllers shall be true active-active.		Clause to be read as "Controllers shall be true active-active". Refer amendments

6	Data Services	Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED with internal or external key management		Offered storage must provide Hardware controller based Encryption or provide Full disks encryption using SED	DGH Data is critical and DGH itself has entrusted this during past requirement. It would be prudent to get encryption to safeguard the information. We request you to please include this clause	Offered Storage must provide data at rest encryption.
---	---------------	---	--	--	--	---

Backup Software

7	The backup software should be Windows based. It must be fully compatible with the storage systems and tape library that are part of the tender	Why the backup software should be w	The backup software should be Linux based or provided as a hardened appliance. It must be fully compatible with the storage systems and tape library that are part of the tender	DGH is holding critical data of nation and it is also well known fact that Windows based system are more susceptible to attacks including ransomware attacks. Keeping Backup in such a fragile environment is not recommended as its absolute whole purpose of keeping a copy of data as backup. We request DGH to consider only linux/unix OS or a hardened appliance be supplied.	No Change.
---	--	-------------------------------------	--	---	------------

8	The software should be capable of performing Block/RDBMS Level and File level data backup / restore. The software must provide functionality for disk-to-tape, block/file based full/incremental backup, vaulting of tapes offline, etc.	Please specify the RDBS details	<p>The software should be capable of performing Block and Oracle, SQL, DB2, Level and Windows and Linux File level data backup and restore including Centos.</p> <p>The software must provide functionality for simultaneously backing up data from disk-to-tape via FC, NFS and NDMP protocols for file based full/incremental backup, vaulting of tapes offline, etc.</p>	<p>Please mention the application and if possible editions/version to provide clarity.</p> <p>It is an important functionality for any backup software to provide restoration capabilities while backuping data from other sources</p>	RDBMS include Oracle 12c	
9	The Backup software should support Hyper-V virtualization servers	Why only Hyper-V virtualisation has been chosen?	The Backup software should support Hyper-V virtualization and VMWare servers	Both the virtualisation stacks are leading and software provided must not be limited to only backing up one stack. We request DGH to include VMWare also		No Change
10	The Backup software shall provide bare metal backup/ recovery of Windows & Linux Servers.	Please mention no. of server of each type of OS				The clause to be read as " The Backup software shall provide bare metal backup/ recovery of 4 nos of Windows Servers.". Refer amendments
New Proposed Points						

11	Backup and Restore Window		Backup and Restor window available is 6 hours	We request DGH to speify this important information as without this the entire purpose of backup solution gets defeated. DGH may change the duration mentioned in clause to provide clarity.		Not Agreed
12	Media Servers		Any extra hardware and software if required to meet above creteria of backup and restore window must be supplied	Different OEM may have different media server or other hardware requirement to meet the SLA.		Not Agreed

Tape Library

S.No.	Categories	Specification	Queries/Clarification	Suggested Clause	Justification/Remarks	DGH's Response
13		Offered Tape Library shall provide 16 Gbps native FC connectivity.		Offered Tape Library shall provide 8/16 Gbps native FC connectivity.	Our Library have 8 Gbps native FC connectivity.	Clause to be read as "Offered Tape Library shall provide 8/16 Gbps native FC connectivity.". Refer amendments

M/s Bharti Airtel Services Limited

Sl. No.	Clause No.	Page No.	Existing Clause	Clarification Sought	DGH's Response
---------	------------	----------	-----------------	----------------------	----------------

1	4.3	31	Delay in acceptance of order	If under clause 4.2 the states that the bidder does not accept the LOA/purchase order being itself an acceptance, then under clause 4.3 delay in acknowledging the Purchase order cannot be regarded as a breach of contract.	To be guided by relevant clause only
2	7.1	32	joint and serveral responsibility	why the bidder will be held responsible for the equipment supplied by another manufacturer	No Change
3	Technical Specifications of Hardware & Software: Clause 5	52	Network Switch	Network switch quanity is mismatching with price format	Quantity of Network Switch - 1
4	Delivery Time: Clause 6.1	56	The bidder will be required to supply the hardware within 8 weeks and complete necessary installation within 10 weeks from the date of LoA from DGH.	Request to amend timeline to delivery 10 weeks and installation 12 weeks	Clause to be read as "The bidder will be required to supply the hardware within 10 weeks and complete necessary installation within 12 weeks from the date of LoA from DGH.". Refer amendments

M/s. PC Solutions

5. Network Switch – 2 No

S. No.	Specifications	Suggestion/Queries	Bidder's Remarks	DGH's Response
1	50 Gbps Forwarding band	Please change this clause as " 80 Mpps forwarding bandwidth"		No Change
2	100 Gbps Switching Band	Please change this clause as " 120 Gpps switching bandwidth"		No Change
3	512 MB RAM	Please change this clause as "min 1GB RAM"		No Change
4	New Clause	Please clarify uplink port requirements	Uplink port requirement is missing	Clause to be added as "Min 2 Nos of 1 G SFP uplink ports. Bidder to provide i)Min 4 Nos of 1 G SFP Modules & ii) Min 20 meter long fiber patch cord to connect the switch to DGH's existing core switch". Out of the 4 SFP modules, 2 nos are to be used at the existing DGH's Core Switch. Refer amendments

3. SAN Storage – Qty 1 No

S. No.	Specifications	Suggestion/Queries	Bidder's Remarks		DGH's Response
5	Capacity	RAID configuration must be Hardware based RAID only	RAID configuration must be Hardware/Software based RAID only.	Hardware based RAID is OEM specific. Therefore request you to revise the clause for wider participation.	No Change
6	Array Architecture	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion.	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical/asymmetrical	Every OEM supports different storage architectures i.e symmetrical/asymmetrical. Therefore request you to kindly revise the clause	Clause to be read as "Controllers shall be true active-active". Refer amendments

7	Data Services	Offered Storage shall support data Snapshot, Thin provisioning, De-duplication, Volume cloning or equivalent features for the offered capacity of the storage array. The proposed system should also include	Offered Storage shall support data Snapshot, Thin provisioning, Volume cloning or equivalent features for the offered capacity of the storage	Every OEM has different mechanism for storage efficiencies. Request you to kindly remove the term deduplication for wider participation.	No Change
8. Backup Tape Library					
8	Pg 53 of 66	8. Backup Tape Library – Qty 1 No; LTO 8 Media Cartridge – 20 Nos; Cleaning Cartridge – 2 Nos	12.Offered Tape Library should have redundant power supplies	Offered Tape Library should have Single power supplies	No Change
9	Pg 53 of 66	8. Backup Tape Library – Qty 1 No; LTO 8 Media Cartridge – 20 Nos; Cleaning Cartridge – 2 Nos	2.Minimum of one (01) LTO-8 or latest FC tape drives and minimum of 8 cartridge slots.	IF Redundant Power Supply is Required -as above ,Then please Change this Clause to Minimum of one (01) LTO-8 or latest FC tape drives	No Change
10	Pg 53 of 66	8. Backup Tape Library – Qty 1 No; LTO 8 Media Cartridge – 20 Nos; Cleaning Cartridge – 2 Nos	3.Offered Tape Library shall provide 16 Gbps native FC connectivity.	Offered Tape Library shall provide 8/16 Gbps native FC connectivity. (As All Tape Library Come with 8Gbps Native FC Connectivity)	Clause to be read as "Offered Tape Library shall provide 8/16 Gbps native FC connectivity.". Refer amendments