# *ANNEX II + III :* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title : Supply of Information & Communication Technology Hardware p 1 /…**

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**Columns 1-2 should be completed by the Contracting Authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the Contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the Contracting Authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words “compliant” or “yes” are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.****Item Number** | **2.****Specifications Required** | **3.****Specifications Offered** | **4.** **Notes, remarks, ref to documentation** | **5.****Evaluation Committee’s notes**  |
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|  | **Lot 1 – Switching & Professional Services** |  |  |  |
| **Item No. 1** | **Storage Area Network (SAN) Switching – Two (2) Units****Two deployed at Primary site in HA configuration.**16Gb Fibre Channel SAN Switch with:* Full duplex; auto-sensing of 2, 4, 8, and 16 Gbps port speeds
* 48 Physical Ports **with 24 Ports Active** (Option to activate other ports via license)
* **Twenty-four (24)** hot-pluggable SFP+, LC connector; 16 Gbps SWL – **Per Unit**
* Power Supply: 100 - 240 VAC 50/60 Hz with C13/C14, US Style Power Cord
* Hot swappable redundant power supply
* 7x24 HW/SW Tech Support and Assistance – 3 Years
* Hardware Limited Warranty – 3 Years
* Software Warranty – 3 Years
* Mission Critical 4 hr Onsite Service – 3 Years
* Premium Switch Deployment Services
* Rack Mount Rails
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|  | **Lot 2 – Storage Area Network (SAN) & Professional Services** |  |  |  |
| **Item No. 2** | **Fibre Channel SAN Array – Two Units****Two deployed at Primary site in HA configuration.**16GB Fibre Channel SAN with:* Auto-tiering method
	+ Policy-based migration based on real-time data usage
* RAID support
	+ RAID 0, 1, 5, 6, RAID 10, and RAID 10 DM (Dual Mirror)
* Thin provisioning / Thin snapshots
* Intelligent deduplication and compression
* Standard replication
	+ Synchronous/Asynchronous using FC or iSCSI
	+ WAN Replication
* Federated multi-array systems
* Dynamic LUN Provisioning
* Live Migrate enabling host-transparent data movement among arrays
* Volume Advisor continually monitors federation to suggest optimal data placement based on custoizable capacity or performance load balancing policies
* Business continuity
	+ Live Volume auto-failover, auto-repair
* Application data protection
	+ Restore host-side data from array
* Data-at-rest encryption
	+ Self-encrypting drives (SEDs) in SSD or HDD formats
	+ Full Disk Encryption (FCE) based on AES-256
	+ Drives certified to FIPS 140-2 Level 2
* **Twenty-four (24)** 1.8TB 10K SED FIPS SAS 12Gb, 2.5 drives – **Per Unit**
* Management Suite Software with live monitoring
* Storage Optimization License
* Remote Data Protection
* 7x24 HW/SW Tech Support and Assistance – 3 Years
* Hardware Limited Warranty – 3 Years
* Software Warranty – 3 Years
* Mission Critical 4 hr Onsite Service – 3 Years
* Premium SAN Deployment & Services
* Data Migration & Replication Service (max of 4 TB)
* Rack Mount Rails
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|  | **Lot 3 – Backup & Recovery Appliance & Professional Services** |  |  |  |
| **Item No. 3** | **Backup & Recovery Appliance – One (1) Unit****One deployed at Primary site.*** Scalable, turn-key solution in an easy-to-use appliance format.
* Supports Replication between appliances
* Backup and Recovery Agents for:
* Microsoft Windows 8, 8.1
* Microsoft Windows 10
* Microsoft Windows Server 2012, 2012 R2
* Microsoft Windows Server 2016
* Microsoft SQL Server 2016 Standard & Enterprise
* Microsoft Exchange Server 2106
* Supports 32-bit and 64-bit environments
* Virtualization Platforms
* Microsoft Hyper-V
* Supports Backup and Replication for 10 TB per session
* Upgradable to 30 TB
* Management / Monitoring Software
* Supports SFP+ Connectivity Short range 10GB
* 7x24 HW/SW Tech Support and Assistance – 3 Years
* Hardware Limited Warranty – 3 Years
* Software Warranty – 3 Years
* Mission Critical 4 hr Onsite Service – 3 Years
* Premium Deployment & Services
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|  | **Lot 4 – Servers / PCs / Data Centre Infrastructure & Professional Services** |  |  |  |
| **Item No. 4** | **Servers – One (1) Unit****Server will join existing SQL Enterprise Cluster****Windows Compatible Rack Mount Server – SQL Cluster**1. Chassis Configuration:
	1. Chassis with not less than 4, 2.5" Hot Plug Hard Drives
2. Processor:
	1. Cores - 4
	2. Threads - 8
	3. Turbo frequency - 3.20GHz.
	4. Four Processors Required
3. Memory Capacity:
	1. 2 Terabytes (TB) / 2, 048 GB
4. RAID Configuration:
	1. RAID 1 + 1 (Only. changing raid would change the quantum of drives required for this server)
5. RAID Controller:
	1. Dedicated RAID Controller required
	2. NO Software RAID
6. Hard Drives: (First Pair – Operating System)
	1. Type: Internal
	2. Solid State
	3. Capacity: 120GB
	4. Interface: SATA
	5. Drive size: 2.5inch
	6. State: Hot-pluggable
	7. Two Drives required
7. Hard Drives: (Second Pair – Data)
	1. Type: Internal
	2. Solid State
	3. Capacity: 1.2TB
	4. Interface: SATA
	5. Drive size: 2.5inch
	6. State: Hot-pluggable
	7. Two Drives required
8. Network Cards: (Ethernet)
	1. Form Factor: Plug-in card
	2. Connectivity Interfaces (Ports): Two (2) x 1000BaseT- RJ-45
	3. Data Transfer Rate: 1 Gbps
	4. Two Network Cards required
9. Network Cards: (Direct Attached Converged Network Adapter)
	1. Form Factor: Plug-in card
	2. Connectivity Interfaces (Ports): Four (4) x 10Gb – SFP+
	3. Data Transfer Rate: 10 Gbps
	4. Four Network Cards required with SR Optics / transceivers
10. Network Cards: (Fiber Channel Host Bus Adapter)
	1. Form Factor: Plug-in card
	2. Connectivity Interfaces (Ports): Two (2) x 8Gb – SFP+
	3. Data Transfer Rate: 8 Gbps
	4. Two Network Cards required with SR Optics / transceivers
11. Network Cards: (Fiber Channel Host Bus Adapter)
	1. Form Factor: Plug-in card
	2. Connectivity Interfaces (Ports): Two (2) x 16Gb – SFP+
	3. Data Transfer Rate: 16 Gbps
	4. Four Network Cards required with SR Optics / transceivers
12. Embedded Systems Management
13. Rack Rails:
	1. Sliding Rails with Cable Management Arm
	2. Bezel
14. Power Supply:
	1. Dual,
	2. Hot-plug,
	3. Redundant Power Supply,
15. Power Cords:
	1. NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, (to match existing UPS infrastructure and the server power supply listed at line 16)
	2. Two Power Cords Required.
16. Operating System:
	1. NO Operating System
17. Hardware Support Services:
	1. Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch, 3 Year
	2. Keep Your Hard Drive 3 Years- The hard drive will be kept by the owner if the server is to be repaired or returned to the supplier while under warranty.
18. TPM
	1. Supports TPM 2.0
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| **Item No. 5** | **Servers – Thirteen (13) Units****Servers host Data Exchange software / services.** **Windows Compatible Rack Mount Server – DEX Client**1. Chassis Configuration:
	1. Chassis with not less than 4, 3.5" Hot Plug Hard Drives
2. Processor:
	1. Cores - 4
	2. Threads - 4
	3. Turbo frequency - 3.10GHz.
	4. Single Processor
3. Memory Capacity: (16GB)
	1. 1GB UDIMM
4. RAID Configuration:
	1. RAID 1 (Only. changing raid would change the quantum of drives required for this server)
5. RAID Controller:
	1. Dedicated RAID Controller required
	2. NO Software RAID
6. Hard Drives:
	1. Type: Internal
	2. Capacity: A minimum size of 500GB
7. Spindle Speed: 7.2K RPM
	1. Interface: SATA 3Gbps (Gigabits per second)
	2. Drive size: 3.5inch
	3. State: Hot-pluggable
	4. Two Drives required
8. Network Cards:
	1. Form Factor: Plug-in card
	2. Connectivity Interfaces (Ports): Two (2) x 1000Base-T - RJ-45
	3. Data Transfer Rate: 1 Gbps
	4. Two Network Cards required
9. Embedded Systems Management
10. Internal Optical Drive
	1. Media: DVD ROM
	2. Interface: SATA
11. Rack Rails:
	1. Sliding Rails with Cable Management Arm
	2. Bezel
12. Power Supply:
	1. Dual,
	2. Hot-plug,
	3. Redundant Power Supply,
13. Power Cords:
	1. NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, (to match existing UPS infrastructure and the server power supply listed at line 16)
	2. Two Power Cords Required.
14. Operating System:
	1. Most recent Operating System. Standard Edition. Factory Inst, NO CAL (must be compatible with existing Operating systems which is Windows Server)
15. OS Media Kits:
	1. Media Kit for Operating System above.
16. Client Access Licenses:
	1. 5-pack of Device Client Access Licenses (Standard)
17. Hardware Support Services:
	1. 3-Year Support with Next Business Day On-site Service
	2. Keep Your Hard Drive 3 Years- The hard drive will be kept by the owner if the server is to be repaired or returned to the supplier while under warranty.
18. TPM
	1. Supports TPM 2.0
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| **Item No. 6** | **Server Rack – Thirteen (13) Units**12U Floor Standing Server Rack with PDU 1. Number of Us
	1. 12 Us (This is the minimum capacity requited to supply adequately space for server and equipment. Maximum of 15 Us acceptable.)
2. Dimensions
	1. Standard 19” rack enclosure with overall dimensions of 24"width x 35"depth x 25"height
3. Cooling:
	1. Roof fan unit
4. Cable Organizer 1:
	1. Vertical Cable Organizer, 8 Cable Rings, Zero U
5. Cable Organizer 2:
	1. Horizontal Cable Organizer, 1 U
6. PDU (Power Distribution Unit):
	1. Eight outlet, 1U
7. Stabilizer Plate
	1. Stabilizer plate (s) to be included
8. Lockable
	1. Front and back doors to be secured via a key
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| **Item No. 7** | **Server UPS – Thirteen (13) Units*** Smart UPS – Rack Mounted
* Input Voltage: AC 120 V
* Output Voltage: AC 120 V
* Power Capacity: 700 Watt / 1200 VA
* Output connectors: Eight (8) NEMA 5-15
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| **Item No. 8** | **Server KMM – Thirteen (13) Units*** 18.5in LED KMM, 1U - English Language Keyboard
* 1U KVM mounting bracket
* 3 Year Support
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