

**Bid Bulletin No. 2**  
September 24, 2019

**REFERENCE No. PB19-240-1**

**Supply, Delivery and Installation of Storage Area Network (SAN) for  
Land Management Bureau (LBM)**

Issued pursuant to Sec. 22.5 of the IRR of R.A. 9184 to clarify and/or amend certain provisions in the Bidding Documents issued for this project, considering the issues raised and clarifications made by prospective bidders during the Pre-Bid Conference held on **September 17, 2018**.

**A. AMENDMENTS/INCLUSIONS**

REFERENCE				BASES FOR AMENDMENT / INCLUSION													
<b>SECTION III. BID DATA SHEET</b>																	
<p><b>BDS Clause 5.4</b> xxx For this purpose, similar contracts shall refer to any contract for <del>Server and/or Network Storage</del> <u>ICT Equipment</u>. xxx</p>				<p><i>To effect change as proposed by the End-User-Agency for more bidders to participate in the bidding and concurrence of Bids and Awards Committee (BAC).</i></p>													
<p><b>BDS Clause 18.1</b> xxx</p> <table border="1"> <thead> <tr> <th align="center">Lot No.</th> <th align="center">Item</th> <th align="center">/Description</th> <th align="center" colspan="2">Amount</th> <th align="center" rowspan="2">Bid Securing Declaration (Pursuant to GPPB Resolution No. 03-2012)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td align="center">Cash, Cashier's/ Manager's Check, Bank Draft/ Guarantee or Irrevocable Letter of Credit  (2%)</td> <td align="center">Surety Bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission  (5%)</td> <td></td> </tr> </tbody> </table>				Lot No.	Item	/Description	Amount		Bid Securing Declaration (Pursuant to GPPB Resolution No. 03-2012)				Cash, Cashier's/ Manager's Check, Bank Draft/ Guarantee or Irrevocable Letter of Credit  (2%)	Surety Bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission  (5%)			
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*For the purpose of this Bulletin and for better understanding of its contents, the following rules shall apply: (a) ~~Double Strike-out~~ – denotes deletion; (b) Underline – denotes inclusion or new item/requirement; and “xxx” – denotes separation of phrase/s being amended from the rest of the main text.*

1	1	Storage Area Network, must have a Dual controller design, at least 22,000 IOPS, Useable capacity: At least 60TB, Raw Capacity: At least 80TB, Flash Capacity: 640GB	2,160,615.39	5,401,538.46	Refer to Section VIII. Bidding Forms  Annex "H"	<b>To amend the amount for item 1 and 2 for the lot.</b>
	2	Storage Area Network, must have a Dual controller design, at least 22,000 IOPS, Useable capacity: At least 20TB, Raw Capacity: At least 30TB, Flash Capacity: 480GB				

**SECTION VII. TECHNICAL SPECIFICATIONS**

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**To effect change as approved by the Bids and Awards Committee (BAC) and concurrence of the End-User-Agency, please see attached Appendix "1" for Revised Technical Specification.**

**B. CLARIFICATIONS/ISSUES/CONCERNS OF THE PROSPECTIVE BIDDERS**

CONCERN	CLARIFICATION
<p><i>Item 1 and 2:</i></p> <p><b>Storage Form Factor</b></p> <p>1. Do you have a rack cabinet with Depth of 1200 mm per site?</p> <p>a. If none, would there be an issue if storage depth beyond the 1075 mm</p> <p>b. if there is an issue, does it mean we have to include</p>	<p>There will be no issue on the storage depth and bidder will not provide the rack cabinet</p>

<p><i>a rack cabinet with 1200 mm</i></p> <p><i>2. What type of power cable do you require for existing PDU per site?</i></p> <p><b>Network Connectivity per Controller:</b></p> <p><i>5. What is the specified model of the existing switch where we will connect the 10Gbs?</i></p> <p><i>a. If SFP+, are the ports licensed? and populated with transceivers?</i></p> <p><i>i. If no transceivers, do we have to provide the transceivers or LMB will provide it?</i></p> <p><i>6. What is the specific model of the existing switch where we will connect the 16Gbs?</i></p> <p><i>a. Are the ports licensed? And populated with transceivers?</i></p> <p><i>if. No transceivers, do we have to provide the transceivers or LMB will provide it?</i></p> <p><i>b. Will LMB handle the SAN Zoning or the vendor?</i></p> <p><i>i. If the vendor, how many servers that we will connect to the storage per site?</i></p> <p><i>7. Will storage array will be connected directly to server or SAN switch?</i></p> <p><i>a. if yes, what is the specific model if the server and does it have HBA already?</i></p> <p><i>i. If no HBA card, do we have to provide the HBA card or LMB will provide it?</i></p> <p><i>8. What is the ratio of your SSD and HDD (in percentage)?</i></p> <p><b>Letter from Integrated Computer Systems, Inc.</b></p>	<p>Common power cable</p> <p>For now we will be utilizing the iSCSI copper cables connection.</p> <p>It will be connected directly either in the Server or network using iSCSI.</p> <p>At least 50/50 ratio.</p>
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All provisions of the bidding document that are affected by newly issued bidding documents templates are deemed modified / amended / revised.

By Rules, all other related provisions in the Bidding Documents correspondingly affected by these amendments are likewise deemed amended to conform to this Bid Bulletin.

Amendments made herein shall be considered an integral part of the Bidding Documents.

**SGD.**  
**ENGR. ROSANA D. YAMBAO**  
*Chairperson, Bids and Awards  
Committee I*

# Technical Specifications

<b>ITEM NO. 1</b>	<b>Storage Area Network, must have a Dual controller design, at least 22,000 IOPS</b> Useable capacity: At least 60TB Raw Capacity: At least 80TB Flash Capacity: 640GB
<b>QUANTITY:</b>	<b>3 units</b>
<b>ABC PER UNIT:</b>	<b>P 5,769,230.77</b>
<b>APPROVED BUDGET FOR THE CONTRACT:</b>	<b>P 17,307,692.31</b>

<b>SAN Storage (3Units) Technical Requirements:</b>		<b>Statement of Bidder's Compliance</b>
<b>Brand and Model being Offered:</b>		
<b>Storage Controller</b>	Must have a Dual Controller design	
<b>IOPS</b>	At least 22K IOPS	
<b>Useable Capacity/Raw Capacity</b>	At least 60 Terabyte (TB)/ At least 80 Terabyte (TB)	
<b>Flash Capacity</b>	At least 640GB	
<b>Cache</b>	<ul style="list-style-type: none"> <li>Offered storage array shall be supplied with at-least 128GB cache/memory per controller for read and write operations.</li> <li>Write DRAM cache shall be completely protected and there shall be no data loss in case of power failure</li> <li>Usable Flash cache shall be scalable to at least 25TB.</li> <li>Offered Storage array shall have capability to dynamically increase or decrease the flash cache.</li> <li>Offered storage array flash cache shall have flexibility to copy the cache worthy incoming write requests while writing to back-end disks in parallel. Vendor shall provide the documentary proof for same.</li> </ul>	
<b>Supported Protocols</b>	iSCSI, FC ready	
<b>Network Connectivity per controller</b>	Offered Storage array shall be supplied with at-least dual controllers and 4 x 10Gbps copper for iSCSI and 8 x 16Gbps for FC ports.	

	Length for Copper and FC: At least standard length.	
<b>Redundant Components</b>	Redundant and Hot swappable Controller and Power Supply	
<b>Type of Storage</b>	<ul style="list-style-type: none"> <li>Offered Storage array shall be a true flash optimized Hybrid array where Front-end shall be offered with 16Gbps and back-end shall be running on 12Gbps.</li> </ul>	
<b>Performance and Capacity Efficiency</b>	<ul style="list-style-type: none"> <li>Offered Storage must support the following critical storage efficiency features and must have minimal to no performance impact <ul style="list-style-type: none"> <li>Inline de-duplication for both SSD and spinning disks</li> <li>Inline compression for both SSD and spinning drives</li> <li>Thin provisioning</li> </ul> </li> </ul>	
<b>Scalability</b>	<p><del>Offered storage must be capable of scaling non-disruptively to the next higher model of storage array within the given family without any forklift upgrade. There shall be no downtime while upgrading the storage to next model.</del></p> <p><u>Offered storage must be capable of scaling-up non-disruptively to the next higher model of storage array within the given family without any forklift upgrade or scale-out to the same model. There shall be no downtime while scaling-up the storage to next model or scaling-out to the same model.</u></p>	
<b>Availability</b>	<ul style="list-style-type: none"> <li>Offered Storage array shall be provided and configured with <del>at least three drive failure protection simultaneously</del> <u>at least two drive failure since the SAN will be used for the LAMS Philippines which is a daily operation system in the Bureau as well as in the DENR Regional Offices</u></li> <li>There shall be no performance de-gradation due to a single component or controller failure. Vendor shall provide the documentary proof for same.</li> </ul>	
<b>Integrated Data Protection</b>	<ul style="list-style-type: none"> <li><del>Offered Storage array shall be supplied with AES-256 XTS FIPS certified encryption at Granular LUN level without using self-encrypted drives.</del></li> <li><u>Offered Storage array shall be supplied with</u></li> </ul>	

	<p><u>256-bit Advance Encryption Standards (AES).</u></p> <ul style="list-style-type: none"> <li>• There shall be no data loss in case of power failure.</li> <li>• Offered Storage array shall provide enterprise availability of 99.9999% or better and with no single point of failure</li> <li>• Offered Storage array shall support more than 1000 Snapshots per LUN / Volume. Vendor shall use efficient performance technology like re-direct on write or better.</li> <li>• Offered Storage shall support storage based asynchronous replication between data centres for effective data protection, without any additional license costs.</li> </ul>	
<p><b>Management and Proactive Wellness</b></p>	<p>Offered storage shall have cloud enabled monitoring and analytics engine for proactive Storage management. All required licenses for same shall be included in the offer. Cloud Enabled Monitoring and analytics engine shall have capability to provide following:</p> <ul style="list-style-type: none"> <li>• Providing Firmware upgrade and patch upgrade recommendations proactively.</li> <li>• Providing historical capacity and performance trend analysis.</li> <li>• Shall provide history of support cases logged with Support team with operational efficiencies. It shall clear demonstrates the percentage of support cases got closed automatically vs manual.</li> <li>• Shall be able to provide the single executive Dashboard covering various critical and must aspects of space saving from data reduction technologies, data protection readiness (Both RPO as well as retention time period) for classified applications running on storage, and disaster recovery readiness for applications.</li> <li>• Provide complete wellness chart of the array and allows the flexibility to define the wellness rule on the basis of defined conditions.</li> </ul>	
<p><b>Performance</b></p>	<ul style="list-style-type: none"> <li>• Offered storage should be able to cluster separate controllers, if needed for additional performance or capacity.</li> <li>• Offered Storage array shall have ability to replicate only incremental changes between</li> </ul>	

	<p>two sites (Primary and Secondary).</p> <ul style="list-style-type: none"> <li>• Offered Storage array shall support and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given LUN selectively.</li> <li>• Offered Storage array must support multiple Snapshots or Clones or Replications sessions without any impact to performance.</li> <li>• Offered Storage array must have capability to replicate data from All Flash to Hybrid Flash or Vice Versa within the given family of arrays.</li> </ul>	
<b>Software Licensing</b>	<p>Vendor shall provide the license for all critical functionalities like Snapshot, Application managed snapshots, Clone, Replication, data Tiering, QOS, LUN Configuration and Management etc. for the maximum supported capacity of array. There shall be no additional software license requirement for future capacity upgrade. Any additional license required for meeting the RFP specification shall also be offered upfront.</p>	
<b>Warranty and Technical Support</b>	<p>Three (3) year, Next Business Day Technical Support and Remote Software Support 24x7</p>	



<b>ITEM NO. 2</b>	<b>Storage Area Network, must have a Dual controller design, at least 22,000 IOPS</b> Useable capacity: At least 20TB Raw Capacity: At least 30TB Flash Capacity: 480 GB
<b>QUANTITY:</b>	<b>16 units</b>
<b>ABC PER UNIT:</b>	<b>P 5,670,192.31</b>
<b>APPROVED BUDGET FOR THE CONTRACT:</b>	<b>₱ 90,723,076.96</b>

<b>SAN Storage( 16 Units)</b>		<b>Statement of Bidder's Compliance</b>
<b>Brand and Model being Offered:</b>		
<b>Storage Controller</b>	Must have a Dual Controller design	
<b>IOPS</b>	At least 22K IOPS	
<b>Useable Capacity/Raw Capacity</b>	At least 20 Terabyte (TB)/ At least 30 Terabyte (TB)	
<b>Flash Capacity</b>	At least 480GB	
<b>Cache</b>	<ul style="list-style-type: none"> <li>• Offered storage array shall be supplied with at-least 64GB cache/memory per controller for read and write operations.</li> <li>• Write DRAM cache shall be completely protected and there shall be no data loss in case of power failure</li> <li>• Usable Flash cache shall be scalable to at least 25TB.</li> <li>• Offered Storage array shall have capability to dynamically increase or decrease the flash cache.</li> <li>• Offered storage array flash cache shall have flexibility to copy the cache worthy incoming write requests while writing to back-end disks in parallel. Vendor shall provide the documentary proof for same.</li> </ul>	
<b>Supported Protocols</b>	iSCSI, FC ready	
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	Length for Copper and FC: At least standard length.	
<b>Redundant Components</b>	Redundant and Hot swappable Controller and Power Supply	
<b>Type of Storage</b>	<ul style="list-style-type: none"> <li>• Offered Storage array shall be a true flash optimized Hybrid array where Front-end shall be offered with 16Gbps and back-end shall be running on 12Gbps.</li> </ul>	
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<b>Warranty and Technical Support</b>	<p>Three (3) year, Next Business Day Technical Support and Remote Software Support 24x7</p>	

**I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.**

_____ Name of Company / Bidder	_____ Signature Over Printed Name of Authorized Representative	_____ Date
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