

### Attachment 3. Specifications for e-Portal

#### 1. e-Portal H/W and S/W

No	Equipment	Specification	Unit	Q'ty
1	Web Server for users and administrator	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 16GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	3
2	WAS Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 16GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	2
3	LMS Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
4	DB Server	<ul style="list-style-type: none"> <li>• 4U Rack Type</li> <li>• <b>8 Core Intel Xeon 2.13GHz/24MB L3 Cache * 4EA</b></li> </ul>	Set	2

		<ul style="list-style-type: none"> <li>• <b>Memory: 32GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Window Server 2008 R2 Enterprise</li> </ul>		
5	LDAP Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	2
6	Content and Uploading Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
7	Search Engine Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1

8	CMS Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
9	Media Server with VoD Transcoding	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 16GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
10	SMS Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
11	DBMS Server for Digital Repository System	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> </ul>	Set	1

		<ul style="list-style-type: none"> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>		
12	Web Analytic Server & Reporting Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	2
13	Backup Server	<ul style="list-style-type: none"> <li>• 2U Rack Type</li> <li>• <b>4 Core Intel Xeon 2.4GHz/10MB L3 Cache * 2EA</b></li> <li>• <b>Memory: 8GB</b></li> <li>• <b>HDD: 300GB 10K SAS * 2EA, RAID 1</b></li> <li>• <b>HBA: 8Gb FC * 2EA</b></li> <li>• LAN: 1Gbps Fiber Ethernet Card * 2EA</li> <li>• ODD: DVD RW</li> <li>• <b>Dual Power Supply</b></li> <li>• OS: Linux</li> </ul>	Set	1
14	Mass Mail Server	<ul style="list-style-type: none"> <li>• <b>Processor: Intel core i5-2400 processor (3.10 GHZ,6MB) and above</b></li> <li>• Graphics: 1GB or above</li> <li>• <b>Memory: 6GB(DDR3 1333MHZ/4GB+2GB)</b></li> <li>• <b>HDD: 1TB(7200RPM S-ATA2)</b></li> <li>• Monitor: 22" LCD Monitor</li> <li>• O/S: Windows 7 Home Premium(64-bit)</li> <li>• Keyboard: Spanish and English</li> <li>• Mouse: USB Type</li> <li>• Including Anti-Virus Program</li> </ul>	Set	1
15	Backup Device	<ul style="list-style-type: none"> <li>• Backup methods <b>LTO 5</b></li> <li>• <b>Drives: 4 EA</b></li> <li>• <b>Slot: 48 or more</b></li> <li>• Support capacity per: 1.5/3TB(uncompressed / compressed)</li> </ul>	Set	1

		<ul style="list-style-type: none"> <li>• Built-in Barcode Reader</li> <li>• A variety of OS environments (Solaris, HP-UX, AIX, etc.) can be configured</li> </ul> <p>Including <i>Cartridge 50Pack, FC Cable</i></p>		
16	SAN Switch	<ul style="list-style-type: none"> <li>• <b>Ports: 24 EA or more (Including SFP)</b></li> <li>• Type of Port : Fiber Channel Interface(E_Port, F_Port, FL_Port, M_Port)</li> <li>• <b>Link speed: 8,4,2.1 Gbps auto-sensing</b></li> <li>• Dual power supply &amp; fan</li> </ul>	Set	2
17	SAN Storage	<ul style="list-style-type: none"> <li>• <b>Dual Active / Active configuration.</b></li> <li>• Controller liver failure, fail-over support</li> <li>• Offers more than 16GB of data cache</li> <li>• <b>Host Interface: 8Gbps FC 8 port, 1Gbps iSCSI 4 port</b></li> <li>• <b>Capacity: usable 20TB</b> (900GB 2.5 in. 10k SAS HDD)</li> <li>• RAID 0, 1, 5, 6, 10 support</li> <li>• <b>The major components (Power, Fan, Controller, etc.) redundancy</b></li> </ul>	Set	1
18	NAS Storage	<ul style="list-style-type: none"> <li>• <b>Dual Active / Active configuration.</b></li> <li>• Controller liver failure, fail-over support</li> <li>• Controller NAS: Per controller supports</li> <li>• Controller FC: Per controller supports</li> <li>• Offers more than 16GB of data cache</li> <li>• NAS: Provides more than 72GB of data cache</li> <li>• <b>Host Interface: 8Gbps FC 8 port, 1Gbps iSCSI 4 port</b></li> <li>• <b>NAS interface 1Gbps 4 port, 10Gbps 4 ports provide more than</b></li> <li>• <b>Capacity : usable 24TB</b> (900GB 2.5 in. 10k SAS HDD)</li> <li>• RAID 0, 1, 5, 6, 10 support</li> <li>• Storage virtualization can support</li> <li>• <b>The major components (Power, Fan, Controller, etc.) redundancy</b></li> </ul>	Set	1
19	Monitoring PC	<ul style="list-style-type: none"> <li>• <b>Processor: Intel core i5-2400 processor (3.10 GHZ,6MB) and above</b></li> <li>• Graphics: 1GB or above</li> <li>• <b>Memory: 6GB</b>(DDR3 1333MHZ/4GB+2GB)</li> <li>• <b>HDD: 1TB</b>(7200RPM S-ATA2)</li> </ul>	Set	1

		<ul style="list-style-type: none"> <li>• <b>Monitor: 22" LCD Monitor</b></li> <li>• O/S: Windows 7 Home Premium(64-bit)</li> <li>• Keyboard: Spanish and English</li> <li>• Mouse: USB Type</li> </ul> <p>Including Anti-Virus Program</p>		
20	L4 Switch	<ul style="list-style-type: none"> <li>• <b>Layer 4~7 Switching</b></li> <li>• <b>Backplane: 16Gbps or more</b></li> <li>• Concurrent Session: 4,000,000 or more</li> <li>• <b>1G Fiber Ethernet: 8ports or more (Including SFP)</b></li> </ul>	Set	2
21	Backbone Switch	<ul style="list-style-type: none"> <li>• 9slots chassis</li> <li>• <b>Backplane: 720Gbps or more</b></li> <li>• Dual Switch Fabric Engine</li> <li>• <b>10G Ethernet: 16ports or more</b></li> <li>• <b>1G Fiber Ethernet: 24ports or more (Including SFP Cable)</b></li> <li>• <b>10/100/1000 Mbps Ethernet: 48ports or more</b></li> <li>• <b>Dual Power Supply</b></li> </ul>	Set	2
22	Workgroup Switch	<ul style="list-style-type: none"> <li>• Backplane: 32Gbps or more</li> <li>• <b>1G Fiber Ethernet: 4ports or more (Including SFP)</b></li> <li>• <b>10/100/1000 Mbps Ethernet: 24ports or more</b></li> </ul>	Set	2
23	RACK	<ul style="list-style-type: none"> <li>• 42U Rack, PDU</li> <li>• Only one(1) rack for KVM Switch, Panel Monitor</li> </ul>	Set	5
24	Cable & Accessory for installation	<ul style="list-style-type: none"> <li>• Including cable &amp; accessory for equipment installation</li> </ul>	Set	1