Attachment 7. Compliance List - Requirements 1/2

The Bid Compliance matrix ensures that bid received is complete. It should cover each point stipulated in the Bidding Document.

No.	Requirements	Compliance (Y/N) Partially	Reference in English Version	Spanish Version	Bidder's Comments
	Overall Project Requirements				
	General Technical Requirements				
1	All active (powered) equipment must operate on 110 Volts at 60 Hertz. All active equipment must include power plugs standard in the Republic of Colombia.				
2	All equipment must operate in environments of general condition of the Republic of Colombia: 5 ~ 40 degrees centigrade, 20-90 percent relative humidity, and 0-10 grams per cubic meter of dust.				
3	All electronic equipment that emits electromagnetic energy must be certified as meeting international standards.				
4	The Bidder shall comply with all laws and regulations of the Republic of Colombia from the bidding stage to the whole period of implementation and maintenance.				
	General Functional Requirements				
1	The Supplier shall develop for acceptance by the Purchaser an implementation plan to develop the Deliverables specified above that best serves the Purchaser's objectives. The methodology to be adopted for the Component shall be clearly stated in a proposed plan.				
2	The Bidder/Supplier shall comply with all laws and regulations of the Republic of Colombia from the bidding stage to the whole period of implementation and maintenance.				
3	The Bidder shall propose a plan to enhance the awareness of educational informatization and/or e-learning in general for the stakeholders of Colombia.				
	Infrastructure				
	Conformity with the Component Objectives				
1	To introduce new H/W and S/W to enhance the service capability of Colombia Aprende.				
2	To establish a NIC Operation Office to take responsibility in operating Colombia Aprende and to manage 5 RIC established in 5 different regions				
3	To provide equipment to 5 RIC to enhance content development capacity				
4	To provide equipment to 5 RIC to enhance teacher training capacity				
	General requirements				
1	The Purchaser seeks to provide H/W and S/W for 1 NIC, 5 RICs and 50 Lab Schools.				
2	The Bidder shall propose a plan to supply, deliver and install the Deliverables specified above that best serve the Purchaser's objectives.				
3	The Bidder shall propose an optimized system.				
4	The Bidder shall propose H/W and S/W compatible with those currently operated by the Ministry of Education of Colombia.				
5	The Bidder shall clearly specify the major functions, specification, features, data and validity for the proposed products.				
6	The Bidder shall consider the market price of Colombia when proposing the price for each H/W and S/W. The proposed price must not be higher than that of Colombia.				
7	The Bidder shall ensure the service environment and equipment compatibility between NIC and 5 RICs.				

8	The Supplier shall be responsible for supply, delivery, and installation of equipment for 50 Lab Schools, 10 for each RIC.				
9	The Bidder shall propose a plan to configure Lab Schools with Wi-Fi environment. Lab Schools are to be asked to select 6-8 classrooms designated for ICT class.				
10	Warranty period of all H/W and S/W related to NIC/RIC is 1 year after the Acceptance Test is complete. However, the Bidder may propose additional warranty period.				
11	The Bidder shall hire a customs intermediation agency (Colombian term of the SIA (Sociedad de Intermediación Aduanera) in Colombia to assist for all the customs related work.				
Technical & Functional requirements					
	NIC				
	NIC Operation office				
1	All the computers are connected to each other, to server, to printer and to digital copier through network.				
2	Computers and Monitors shall be connected to the proposed UPS.				
3	Computers shall be connected to the intranet of the Ministry of Education of Colombia.				
4	The Bidder shall propose an installation plan for equipment, network cabling, power cabling, etc including cabling routes, methods, etc.				
5	The Bidder shall provide a list of additional equipment to be used to install the equipment.				
6	NIC Operation office is to be established in the Ministry of Education of Colombia.				
7	Refer to the attached floor plan for detailed information.				
8	The Bidder shall bear responsibility to support the cost of the Help Desk to run 6 staff for 12 months. No additional H/W or S/W is required but only the operational cost.				
	RIC				
	RIC overall technical requirements				
1	5 RICs are to be established throughout Colombia in separate regions. Floor plans of each RIC are attached separately.				
2	Each RIC has two networks, Internet and RENATA, and the Bidder shall propose a network system to connect these 2 networks. Expected network speed for the 2 networks upon commencement of the Project is as follow.				
3	The Bidder shall propose a system design to connect the current network of RIC.				
4	The Bidder shall propose H/W and S/W whose maintenance is possible in Colombia. In case maintenance of such H/W and S/W are not possible, the Bidder shall propose a separate plan to realize the maintenance.				
5	All video/audio equipment to be proposed shall abide by the TV signal standards of Colombia (NTSC) and OS and keyboards shall support Spanish language (Latin American configuration).				
6	Space to establish rooms of RIC shall be provided by each RIC and the Supplier shall be responsible for interior design, network/power cabling, furniture layout and supply, delivery and installation of the equipment.				
7	The Bidder shall propose an electricity plan with required electricity for each room and requested location of power distribution boxes. RIC shall be responsible for power cabling from the main power distribution center to the power distribution boxes of all rooms.				
8	The Supplier shall be responsible for the power cabling from the distribution box to equipment except lighting.				
9	The Bidder shall acknowledge that the number of equipment on the Deliverables is minimum requirements. The Bidder shall review thoroughly the attached floor plan to propose adequate number of equipment.				
10	The Bidder shall propose a space plan for each room of RIC including detailed electricity/network cabling and interior design plan.				
	RIC Server and Storage System				

1	The Bidder shall propose a network cabling plan to connect the server room of RIC to all other RIC rooms with LAN cable of Category 7A supporting IpV6 protocol and 20 years factory warranty. The connection shall be functional with the existing and/or new connection each RIC provides.					
2	All PC shall be connected to both the test server and the digital resource management server to be placed at the server room.					
3	The Bidder shall propose a plan to separate the RIC network with the current network of RIC to restrict access from any unauthorized users.					
4	The Bidder shall propose H/W and S/W that are compatible with H/W and S/W for NIC (e-Portal H/W and S/W).					
5	The Bidder shall propose a digital repository system for NIC to monitor the content information stored in DAS storage of RIC.					
6	The Bidder shall propose a plan for NIC or the Ministry of Education of Colombia to manage the content developed by 5 RIC.					
	RIC Operation Office					
1	All computers shall be connected to each other, to server, to printer and to digital copier through the network.					
2	Computers and Monitors shall be connected to the proposed UPS.					
3	The Bidder shall propose an installation plan for equipment, network cabling, power cabling, etc including cabling routes, methods, etc.					
4	The Bidder shall provide a list of additional equipment to be used to install the equipment.					
5	The Bidder shall propose a space plan for the Operation office with the interior design method.					
6	The Bidder shall propose required equipment including interior design.					
	RIC Multimedia Studio					
1	It is recommended that the Supplier use cables and connectors that abide by all international standards.					
2	Video cables shall be able to transmit HD signal and cables of 4C and above shall be used.					
3	Phases of power for system (10Kw) and lighting (10Kw) shall be separated. In case the Supplier finds that the capacity of power required for the studio exceeds the capacity stated above, the Supplier may propose the required power capacity.					
4	Non-Linear Editing System shall be connected to VCR and HD Switcher for effective editing.					
5	The control room and the Content Development and Research office shall be connected through network for file sharing.					
6	All cameras shall be equipped with 'tally system' for showing broadcasting images and it should be easily identifiable whether it's active or inactive.					
7	Communication channel must be established between camera operators and producers using intercom system.					
8	The system design of studio shall follow international broadcasting standard.					
9	Control Room shall be designed for basic editing.					
10	All Studio system shall be synchronized.					
11	The Studio system shall be established for instant encoding at the same time the video capturing at the control					
12	The standard of video signal shall be HD-SDI (support 1080p, except HDV VTR), and TV signal shall support NTSC.					
13	Storage for saving and sharing content shall be established. DAS storage type for easy access to the content by CDR staff is highly recommended.					
14	HD camera system shall have the following functions:					
	a. HD-SDI signal processing.					
	b.Visual recording shall support 50Mbps, 4:2:2 and be saved with MXF format					

	c.Image censor shall be over 2,000,000pixel				
15	HD switcher system shall have the following functions:				
	a. Virtual studio, live switching, multi channel recoding, multi-view, live streaming, text and graphic overlay function, and signal monitoring functions				
	b. Function to record multi-track, multi-format(QuickTime, MPEG-2, AVI, H.264)				
	c. Function to share computer screens or displays from network connected (Windows® or OS X® based) computer systems				
	d. Function to connect any combination of HD-SDI, HD Component, SD-SDI, SD Component, Y/C (BNC) or Composite connections and resolutions				
	e. Multi-track, multi-format recording of all input channel(up to 8 simultaneous channels)				
	f. 8 or above HD SDI signal input				
16	Multimedia studio shall be constructed with the following conditions:				
	a. Studio shall comply with international standards. The Bidder shall propose the expected reverberation time and noise level. The requirements are as follow:				
	i) Reverberation time : RT60=0.5~0.8sec				
	ii) Noise level : Less than 34dB(A)				
	b. The Bidder shall acknowledge that each Multimedia Studio of RIC has different space and conditions. Refer to the attached floor plan to propose appropriate design of each Studio.				
	c. The Bidder shall propose a fire-proof and fire extinguishing installations.				
	d. The Bidder shall propose an air conditioning system for the Studio.				
	e. The Bidder shall propose a sound-proof (isolation) plan with detailed finishing and installation methods.				
	f. Heat resistant cables are recommended for lighting installation.				
	g. All lightings shall be installed on pipe grid using light hanger. Pipe grid shall be installed with each grid within				
	RIC Content Development and Research (CDR) Office				
1	All computers shall be connected to each other, to server, to printer and to digital copier through the network.				
2	Computers and Monitors shall be connected to the proposed UPS.				
3	The Bidder shall propose an installation plan for equipment, network cabling, power cabling, etc including cabling routes, methods, etc.				
4	The Bidder shall provide a list of additional equipment to be used to install the equipment.				
5	The Bidder shall propose a space plan for the Operation office with the interior design method.				
6	The Bidder shall propose required equipment including interior design.				
	RIC Multimedia Classroom				
1	All computers shall be connected to each other, to server, to printer and to digital copier through the network.				
2	Computers and Monitors shall be connected to the proposed UPS.				
3	The Bidder shall propose an installation plan for equipment, network cabling, power cabling, etc including cabling routes, methods, etc.				
4	The Bidder shall provide a list of additional equipment to be used to install the equipment.				
5	The Bidder shall propose a space plan for the Operation office with the interior design method.				
6	The Bidder shall propose HD based video conferencing system.				
7	The Bidder shall propose a space plan in consideration of the effective utilization of secondary monitor.				

8	The bidder shall complete establishing at least one multimedia classroom of the Central RIC within the end of the first 3rd month of the project to accommodate the staffs for the pilot project of the content development ..				
9	The Bidder shall propose required equipment including interior design.				
10	Refer to the attached floor plan for detailed information.				
11	The Bidder shall design and propose a plan to manage all the equipment of a classroom through a tablet.				
12	The Bidder shall propose a DSP Mixer with built-in echo cancelling function for video conferencing.				
13	Visual signal in a classroom shall be proposed with HD based system.				
14	The Bidder shall propose furniture based on 1 table per 1 person.				
	RIC General Classroom				
1	All computers shall be connected to each other, to server, to printer and to digital copier through the network.				
2	Computers and Monitors shall be connected to the proposed UPS.				
3	The Bidder shall propose an installation plan for equipment, network cabling, power cabling, etc including cabling routes, methods, etc.				
4	The Bidder shall provide a list of additional equipment to be used to install the equipment.				
5	The Bidder shall propose a space plan for the Operation office with the interior design method.				
6	The Bidder shall propose required equipment including interior design.				
7	Refer to the attached floor plan for detailed information.				
8	The Bidder shall design and propose a plan to manage all the equipment of a classroom through a tablet.				
9	The Bidder shall propose a DSP Mixer with built-in echo cancelling function.				
10	The Bidder shall propose furniture based on 1 table per 2 people.				
	RIC Security System				
1	The Proposed system shall cover all the areas of RIC facilities. The deliverables are minimum requirement and the Bidder may propose additional equipment.				
2	The Bidder shall propose a unique plan for each RIC to reflect the locations of RIC facilities.				
3	DVR system shall support Spanish language.				
4	The Bidder may provide a list of additional equipment for access control system (using the RFID technology). The proposed equipment should be compatible with the DVR system.				
5	The Bidder shall review the attached the floor plan of RIC and propose locations of cameras, sensors to provide a security system.				
6	The Bidder shall propose an installation plan including cabling method and material of cables.				
	Lab schools				
1	Proposed equipment such as notebook, printer, projector, proxy server shall support Spanish language.				
2	Proposed portable stations shall include recharging system with locking mechanism.				
3	Required AP may vary by each Lab School. The Bidder may propose additional number of AP.				
4	The Bidder shall propose a plan to utilize a proposed proxy server to connect to Colombia Aprende. Proxy server is designed to download the content from Colombia Aprende and use it in classroom.				
5	The Bidder shall propose a classroom management solution to include functions to control/monitor students' screen and to transmit the teacher's screen to students' screen.				
6	Proposed firewall S/W shall include anti-virus and child protection functions.				
7	Proposed 2 portable stations shall accommodate 10 notebooks for students, 1 notebook for a teacher, 1 projector and 1 printer.				
8	Proposed UPS shall abide by electricity standards of Colombia.				

9	The Lab Schools shall be connected to Internet (Minimum speed: 2Mbps) and the connection cost to Internet (Satellite connection cost excluded) shall be borne by the Supplier for 1 year upon completion of acceptance test.				
Role & Responsibilities					
1	The Supplier shall propose a role & responsibilities model on the basis of the requirements stated below.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. The Bidder shall present the point of change management clearly.				
3	The Bidder shall present the point of change management clearly.				
Human Resource Requirement					
1	The Supplier shall propose a plan for human resources on the basis of the basic human resource requirements stated below and shall provide the certificates of experience. The bidder must deliver evidence that all the proposed personnel has given its consent to participate in the "ICT Education Capability Building in Colombia" Project. The Purchaser will reserve the right to verify the evidence. In case the consent was not given, the proposal shall be rejected.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. However, the Bidder shall prove each human resource's capabilities in the specific field.				
3	The Bidder may propose a team of human resources to perform the work specified below as performed by 1 person as long as the team's performance is guaranteed and it meets the duration requirement below.				
e-Portal					
Conformity with the Component Objectives					
1	To provide a scenario for the creation of networks and communities of learning based on web 2.0, 3.0 and later, which foster research and innovation through virtual scenarios for the learning community.				
2	To provide coursewares and different types of high quality Learning Content to be accessed by educational community, with the purpose of generating knowledge from multiple perspectives, formats and tools, that answer to their needs and interests.				
3	To improve e-Portal services through the use of solutions based on flexible and scalable technologies to optimize usability and allow a better user experience.				
4	To provide mechanisms that allow knowing trends, likes, interests, statistics of use to permanently evaluate the services and products offered to community, so decisions can be taken on a proper way and be reflected on e-Portal operation and Policies.				
5	To define a sustainability plan to the effective operation and revitalization of Content and Services offered by Colombia Aprende.				
6	To enhance the quality of teachers with the virtual teacher training system.				
General requirements					
1	The Purchaser seeks to enhance Colombia Aprende, current e-Portal managed by the Ministry of Education of Colombia to meet international standards and to accommodate more users and user groups.				
2	The Bidder shall propose a plan to develop the Deliverables specified above that best serves the Purchaser's objectives. The configuration diagram of the proposed system with goals and functions shall be clearly stated in a proposed plan.				
3	e-Portal H/W and S/W for Colombia Aprende are to be installed at an IDC later designated by the Ministry of Education of Colombia (near Bogota).				
4	The Bidder shall propose H/W and S/W compatible with those currently operated by the Ministry of Education of Colombia in Colombia.				

5	To ensure compatibility between NIC and RIC system in the future, the proposed system shall guarantee safety, compatibility and expandability.				
6	The Bidder shall propose a plan to increase the awareness of e-Portal by teachers and students.				
7	e-Portal shall be implemented with Spanish language used in Colombia. Operating systems and keyboards provided shall support Spanish as well.				
8	e-Portal shall provide cross-browsing functions (interoperable with general web browsers such as Internet Explorer, Safari, Chrome and Firefox).				
9	The Supplier shall not infringe any intellectual property rights of others for any content including images and multimedia resources utilized for e-Portal. The Purchaser shall not be liable for any infringement.				
10	The Purchaser shall acquire all exclusive rights, including all transferable intellectual property rights (IPR) and use rights, in the deliverables, including their specification, algorithms, architectural approach and technical solution and specifically all rights in software, sources and comments as contained therein. Such rights shall include the absolute right to develop, modify or have modified such software.				
11	There shall be no license fees, once the e-Portal is handed over to the Purchaser.				
12	There shall be no limits on the number of users that can use e-Portal.				
13	The Supplier shall bear all responsibility to take any necessary security measures against any hacking threats during the Project.				
14	The source code for e-Portal shall be supplied except the source code for commercial packaged solutions.				
Technical & Functional requirements					
	Overall H/W & S/W				
1	The Bidder shall carefully analyze the configurations of H/W, S/W and network system required in RFP and design an open architecture system.				
2	The system shall be proposed as SMP (Symmetric-Multi- Processing).				
3	The proposed server system shall consider the speed and reliability of the storage device and establish a fiber channel based SAN (Storage Area Network) including SAN storage (20TB).				
4	The server system shall be designed to avoid service interruption including the automatic management function.				
5	The proposed server system shall monitor the presence of abnormality in the system and shall be established to maximize the reliability of the system.				
6	The proposed server system shall support Hot-Swap and Plug functions in order to provide uninterrupted service when problem occurs at the disk.				
7	The power for the proposed server and storage shall have duplex configuration and have hot-swap function.				
8	The configuration shall allow the monitoring of performance, capacity, configuration and disturbance of the server resources (CPU, Cache, Memory, Disk) on a real time basis in GUI environment.				
9	The network interface card and HBA card of each server shall have duplex configuration and include automatic disturbance transference function.				
10	The proposed system shall support the back-up channel mode (fail over) and load balancing functions in preparation for the disturbance at I/O channels between server and storage as well as provide the S/W required for duplex configuration (Active-Active).				
11	To provide smooth e-Portal service, the proposed system shall have sufficient network broadband and be able to spread out the network loads, which are temporarily concentrated.				
12	The proposed commercial S/W shall be authentic products. If they are open sources, they should be free from any technical, legal or administrative restrictions.				

13	All proposed S/W shall be authentic and latest. For each product, license is provided. They shall not infringe any copyrights.				
	Web Server				
1	Support HTTP/1.1 (RFC2616)				
2	Be Operational on any Linux operating system				
3	Support relational databases for LDAP authentication				
4	Include Multiple Directory Index directive functions				
5	Include Unlimited flexible URL rewriting and aliasing functions				
6	Include Content negotiation functions				
7	Include Virtual Host functions				
8	Include Configurable Reliable Piped Logs functions				
	Web Application Server				
1	Support J2EE 1.4 certification and JavaEE5 certification				
2	Support EJB 3.0				
3	Support incorporation with both JSF2.1 and JSF engine				
4	Support Web Service Metadata (WSM)				
5	Support Web Server monitoring environment (Desirable)				
	DBMS				
1	Be operational under Window Server 2008R2 OS				
2	Support ANSI SQL				
3	Support Core DB Operations				
4	Comply with ACID				
5	Support online backup				
6	Support Reporting functions				
7	Support Auto-tuning functions				
8	Support Analysis and OLAP functions				
9	Support high-availability functions				
	LDAP Server				
1	Be operational under Linux OS Platform environment				
2	Support Lightweight Directory Access Protocol (v3)				
3	Support access to X.500 directory service				
	Search Engine				
1	Supports Linux OS platform				
2	Support functions of data indexing and update of shared memory composed of number information (date, field limit code, etc.)				
3	Support functions of applying to weight application by fields and controlling ranking rules				
4	Support for arranging Spanish and multiple languages in high speed				
5	Support functions to arrange category by groups and count it				
6	Support Unicode (UTF-8)				
7	Support Morphological analyzer of Spanish				
8	Support dictionary (system dic / user dic / pre-analysis dic / stemming dic) edition and building tools				
	Content Management System				
1	Be operational under Linux OS platform				

2	Support functions to generate general standard printing template that can be automatically applied for current and new content				
3	Support access control functions by user groups to control access to web pages by authorized users				
4	Support life cycle management functions to manage overall life cycle of content from creation, revisions, publication and archiving to discard of content				
5	Support content virtualization functions for administrators to work with virtual copy of the entire web site.				
6	Support functions to support multi-language user interface including Spanish				
7	Support version management functions				
Learning Management System					
1	Be operational under Linux OS Platform				
2	Support functions to work with RDBMS such as Microsoft SQL Server, MySQL, PostgreSQL				
3	Support registration by IMS Enterprise and other standard methods				
4	Support IMS QTI, XML and XHTML formats for quiz questions (Support import and export functions)				
5	Support management functions through IMS Content Packaging, SCORM, AICC (CBT), LAMS standards				
6	Support integration with Drupal, Joomla or 3rd party CMS				
Digital Repository System					
1	Support digital resource storage system to store digital asset resources with related metadata				
2	Support interface for administration, deposit, ingest, search and access				
3	Support both "JSPUI using JSP" and "Java Servlet API & XMLUI"				
4	Support web interface as a default and support OAI-PMH 2.0				
5	Support functions to export METS (Metadata Encoding and Transmission Standard) package				
6	Support common interoperability standards to use institutional repository domain such as Open Archives Initiative Protocol for Metadata Harvesting, SWORD, OpenSearch, RSS				
7	Support Dublin Core (simple and qualified) and LOM metadata.				
8	Support relational DB				
DBMS For Digital Repository System					
1	Be operational under Linux Operating System				
2	Support ANSI SQL				
3	Comply with ACID				
Media Server with VoD Transcoder and Network DVR					
1	Be operational under Linux OS Platform				
2	Support up to 10Gbps per-server performance				
3	Support Video Streaming (live and on-demand)				
4	Support Audio Streaming (live and on-demand)				
5	Support Multi-Protocol, Multi-Client Streaming				
	a. Flash (RTMP, RTMPT, RTMPS, RTMPE, RTMPTE)				
	b.iPhone/iPad (HTTP Streaming)				
	c.Silverlight (Smooth Streaming)				
	d.QuickTime/3Gpp (RTSP/RTP)				
	e.IPTV (MPEG-TS)				
6	Support VoD Transcoder with the following encoding and decoding characteristics:				
	a. Decoding: Video (MPEG2, MPEG4 Part2, H.264/AVC), Audio (MP3, AAC, MPEG1 Part1/2, Speex, G.711)				
	b. Encoding: Video (H.264/AVC), Audio (AAC(LC & HE))				

	Server Management System					
1	Be operational under Linux OS Platform					
2	Be a Single Integrated Product					
3	Support open source CMDB as a single repository to manage IT resources					
4	Support the following monitoring functions					
	a. ICMP response testing					
	b.SNMP response testing					
	c.Standard TCP/IP services testing					
	d.Windows/Linux service availability testing					
	e.Windows/Linux process availability testing					
5	Support the following Performance Monitoring functions					
	a. Scheduled collection and storage of SNMP OID values					
	b. Agentless native JMX performance monitoring of J2EE servers					
	c. Pre-loaded MIBs and new local MIBs					
6	Support Event Management, Log Monitoring & Altering functions					
7	Support Web-based console/dashboard					
	Web Analytics and Reporting System					
1	Be operational under Linux OS Platform					
2	Support functions to general and analyze web usage statistics through Script Embedding based Data Collection. However, the script shall be asynchronous not to affect the loading speed of the site and the average streaming loading speed shall be within 60ms					
3	Support hierarchy classification and filtering of 80 or more analysis dimension, 130 or more general measurement index and multidimensional segmentation.					
4	Support extension of user classification report with the combination of Dimension-Index-Segmentation-Filter					
5	Support auto mailing service					
	FTP Server					
1	Support Linux OS platform					
2	Support LDAP authentication and SQL authentication					
3	Support protocols for FTP, FTPS, SFTP, SCP, HTTP, HTTPS, WebDAV and WebDAV over SSL					
4	Support SSH Tunneling and HTTP(S) Tunneling					
5	Support GUI remote administration					
6	Support functions for Events/Alerts					
7	Support functions for Protocol Conversion (incoming FTP/FTPS/SFTP/HTTP/HTTPS protocols converted to a back end FTP/SFTP server)					
	Office to PDF Auto Converter					
1	Support automatic conversion from MS Office document to PDF format document					
	Grid Solution					
1	Support Java Applet					
	Back-up Server					
1	Support Spanish-based GUI to configure and manage all functions as a single platform					
2	Monitor all process of each task in real-time					
3	Support user-friendly interface to manage several rules to retrieve various and complex data					
4	Support various backup functions such as deletion of repetitions, inline copy, relay, multiplexing, dispersion					

5	Provide alert functions to alter administrator in case of user defined events				
6	Support Full Back-up, Incremental Back-up, Differential Back-up and Synthetic Full Back-up				
Portal Framework and User Interface Framework					
1	Support WSRP/JSR 168 standards				
2	Support WEB 2.0, AJAX, JSF and real-time test with debugging for UI Framework				
Mass Mail Server					
1	Be operational under Windows 7 or 8 platform				
2	Over 90 HTML email marketing templates included				
3	Autoresponder to send automatic email marketing drip campaigns				
4	Bypass external SMTP mail servers with Direct Sending				
5	256 simultaneous delivery connections for fast sending				
6	Easy double opt-in email collection and subscription management				
7	Automatic unsubscribe, opt-out and bounce processing				
8	An entire year of open and click-through tracking with GroupMetrics				
9	Create unlimited customer surveys and collect unlimited responses				
10	Real-time campaign reporting down to specific email address activity				
11	Login permission for your clients to see their email tracking reports				
12	Schedule email marketing campaigns to send and recur later				
13	Easy to read survey response reports with charts and graphs				
14	Install in English, Spanish				
15	No recurring fees				
16	Unlimited email sending capability				
e-Portal H/W Functional Requirements					
1	Web Server (mirroring), WAS Server (mirroring), DB Server (Clustering, active-active), LDAP Server (mirroring) shall have duplex configuration.				
2	The duplex server system for high availability shall be configured in a way that the resource allocation and collection among partitions (CPU or Core) is possible in order to maximize the server resource.				
3	All of the duplex server systems for high availability shall be separated into 2 physical systems in their configurations and proposed in a way that their specification, performance, operating system and S/W version are established equivalently.				
4	To ensure the stability of system files such as OS and system S/W, the internal disk of all servers shall be configured as mirroring.				
5	The storage shall be configured in a way that it can allow the volume up and down while online and create different volumes into one file system.				
6	The data area of storage shall be configured in a way that it can ensure continuity of service at the single storage disturbance point.				
7	The storage back-up area shall be configured using internal copying solution and file copying solution.				
8	To ensure compatibility between different types of network devices, The Bidder shall propose products that comply with international standards.				
9	The connection between major networks and major servers shall handle large capacity traffic.				
10	The proposed system shall provide real-time collection of system operation log, security log and network log with monitoring functions.				
11	The proposed system shall be configured for backup and recovery through AP server, DB server and SAN switch.				

12	The proposed system shall support OS based backup and recovery for efficient OS backup.				
13	Storage shall be configured to increase/decrease/expand the volume and to generate one file system with systems of different volumes.				
	User Registration and Authentication				
1	User registration and authentication functions shall be provided for only users with proper authentication to access restricted information. General information and some contents in all the E-Portal as notices, some videos and audios, shall be open to any users without authentication.				
2	User registration function shall be provided through a registration page for users to register ID and Password.				
3	User Agreement shall be provided for registration and only agreed users shall be able to register.				
4	Account (ID) shall be identical and no same account shall be issued.				
5	In case the Purchaser wants to utilize identification number of Colombia (similar to the registration number of Korea), such identification number shall be checked and any overlapping accounts shall be automatically blocked from registration.				
6	Upon registration, users shall be able to select their user groups.				
7	User groups shall be categorized by age and by participating groups such as students, teachers, parents, administrators, etc.				
8	Services shall be personalized for each user group. User groups shall access to the information that is relevant and authorized for each user group.				
9	LDAP server shall be utilized to manage the database of user authentication.				
10	Users shall be able to withdraw from e-Portal and withdrawal menu shall be accessible by general users.				
	Customization and Personalization				
1	Authenticated users shall be able to customize the service upon theirs interests.				
2	Personalized service shall be utilized for authenticated users. Content recommended by web master or content peer groups have viewed frequently shall be provided for users to personalize the service.				
3	Configuration menu shall be provided to users to customize and personalize the service.				
	Content Upload and Sharing				
1	Content upload functions shall be divided into two main user groups; general user groups (teachers and students) and administrators.				
2	Depending on authentication and login policy, content provided to users shall be differentiated.				
3	Content upload by general users				
	a. Content upload by general users shall be user friendly with easy-to-use input screen of metadata, intellectual property related information, category info. Content to be uploaded shall be attached through attachment function on the same screen. There shall be included and considered, among others: • Editing and updating functions • Content representation and visualization functions • Advanced search functions • Statistics and reports functions • Metadata logs import and export functions • Publishing management				
	b. Content to be uploaded by general users shall be stored in the temporary repository. Only content reviewed and approved by the authorized e-Portal administrator upon approval of the Quality Control Team shall be transferred to the service repository system. Content shall be serviced through CMS.				

	c. File size of the content to be uploaded by general users shall be restricted under 10MB.					
	d. Content upload by general users shall utilize FTP or HTTP protocol.					
4	Content upload by Administrators					
	a. Content upload by administrators between NIC and RIC shall utilize the OAI-PMH/SWORD/WebDAV protocol.					
	b. Content uploaded by RIC administrators to NIC shall be user friendly with input screen of metadata, intellectual property related information, category info. Content to be uploaded shall be attached through attachment function on the same screen. There shall be included and considered, among others: • Editing and updating functions • Content representation and visualization functions • Advanced search functions • Statistics and reports functions • Metadata logs import and export functions • Publishing management					
	c. Content uploaded by RIC administrators shall be directly stored in the NIC repository system and content shall be serviced through CMS by web masters of e-Portal.					
Streaming Service						
1	Streaming service is for video, audio and flash content.					
2	The streaming service speed per session shall not exceed 500Kbps.					
3	Content to be streaming serviced shall be transcoded to be viewable for computers, smart phones and tablets.					
4	Only authenticated users shall be able to Access streaming on the Digital Repository, while all users shall be able to access video and audio streaming of the general spaces of the E-Portal (related with general information or					
Advanced Search Function						
1	Search functions shall utilize natural language search of Spanish, key word search, basic and advanced search, Boolean search, search within searched items, complete match search, close match search, boundary search, etc.					
2	Searched items shall be viewed by ranking and by array/filtering categories.					
3	Search functions shall include key word completion, spelling check & correction functions.					
4	Search shall be performed on Colombia Aprende.					
5	Statistics of search shall be stored and presented.					
Content Service						
1	Content for students shall be categorized by such categories as 1. Author, 2. Public Objective (students, teachers, parents, etc) 3. Grade or groups of grades, 4. Competences, 5. Subject, 6. Format (type of content), 7. Language, 8. Date and etc.					
2	Content for teachers shall be categorized by such categories as 1. Author, 2. Public Objective (students, teachers, parents, etc) 3. Grade or groups of grades, 4. Competences, 5. Subject, 6. Format (type of content), 7. Language, 8. Date and etc.					
3	Content to be developed during the Project shall be serviced.					
4	Content shall be personalized to each user by interest, user group and peer groups' interest, etc.					
5	Content shall be categorized and searched by media categories such as text, image, sound, video, document, etc.					
e-Book Service						
1	e-Book shall be provided to students and teachers.					
2	Only e-Book that does not infringe any intellectual property rights shall be serviced.					
3	e-Book shall be converted from any text based document to pdf and/or epub format document.					

	Community Service based on SNS					
1	Community service based on SNS (Social Network Service) shall be serviced to students and teachers.					
2	The Bidder shall propose which SNS will be utilized and propose a plan.					
	Web 2.0 Services (Forums, Blogs, Wikis, Chatting)					
1	The Bidder shall propose what Web 2.0 services will be utilized and propose a plan.					
	Virtual Teacher Training					
1	Virtual teaching training shall be serviced through LMS (Learning Management System).					
2	LMS shall provide functions to register virtual teacher training content and to notify through e-Portal.					
3	LMS shall provide functions for teachers to register for RIC teacher training courses including Master Teacher training, Leader Teacher training and other trainings authorized by the Purchaser.					
4	LMS shall be able to accommodate 30 hours of pre-virtual courses and 20 hours of post-virtual courses with 6,000 users one time.					
5	LMS shall accommodate all the curricular analysis data and teaching objectives. It shall be inter-connected with the analysis data.					
6	Functions to generate quiz and exams shall be provided.					
7	Feedback functions shall be utilized for evaluation of trainee's reports.					
8	Statistics shall be provided.					
	Guidelines					
1	Guidelines shall be provided for the services provided to teachers and parents.					
2	Guidelines for teachers shall be serviced through HTML document or multimedia format. They may include content development manual for teachers, online teacher training manual, etc.					
3	Guidelines for parents shall be serviced through e-book or multimedia format.					
	General Information Services (Notifications, Agenda, Events)					
1	e-Portal shall be accessible by general public and users who do no log in to some information such as notifications, agenda, events, or any information the Purchaser wishes to publicly be open. Such information shall be managed by CMS.					
	Monitoring activity of authenticated users					
1	Administration mode/menu shall be provided to manage authorized users.					
2	Functions to distinguish active user, inactive users, withdrawn users by the rules set by administrators shall be provided. Administrators shall also have an authority to temporarily disable any service for and opened by inactive users.					
3	Functions to restrict users who violate any third party rights, threat, humiliate, libel any other users or distribute or pose any immoral and/or sexually explicit media including text, picture, illustration, video, audio and others shall be provided to administrators.					
	E-portal General Statistics					
1	General statistics related to the operation of e-Portal shall be provided to administrators.					
2	General statistics include daily/weekly/monthly/yearly statistics on page views, number of visitors, number of initial/second/repetitive visitors, number of authenticated users, and number of registered users.					
3	General statistics shall utilize multi-dimensional segmentation to categorize user groups and analyze by user					
4	Functions to track page movement by users, analyze page input-output, average usage time shall be provided.					
5	Major statistics shall be provided in graphs by period of time.					
	Web Accessibility					
1	e-Portal shall be accessible by the visually impaired.					

2	The visually impaired shall be able to access the information of e-Portal through keyboard and/or TTS program.				
	Mobile Web Page Support				
1	e-Portal shall support mobile web environment to provide adequate service to mobile devices with different screen ratio and resolutions.				
2	Mobile service may not include content that is not appropriate for mobile service. The Supplier shall recommend what service can be realized in mobile web environment to the Purchaser.				
	Data Backup				
1	Back-up system shall be customized for periodic data back-up from designated server or DBMS.				
2	The system shall provide functions to designate and change targets for back-up and depending on back-up policy, periodic back-up shall be performed.				
3	They system shall support back-up not only for the data inside the file system but also for the data managed through LDAP or DBMS.				
4	The system shall support full back-up, incremental back-up, differential back-up, etc.				
	Legacy Data Migration				
1	Legacy data from the current Colombia Aprende shall be migrated to the new e-Portal. Selection of the legacy data to be migrated to the new e-Portal shall be proposed by the Supplier and decided by the Purchaser.				
2	The Supplier may select local agency to migrate the data. However, the Supplier shall bear all the responsibilities of the migration.				
	Translation service for e-Portal				
1	The proposed e-Portal shall provide the multi-language translation service for its content.				
2	The Bidder shall provide a solution for this service				
Role & Responsibilities					
1	The Supplier shall propose a role & responsibilities model on the basis of the requirements stated below.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. The Bidder shall present the point of change management clearly.				
Human Resource Requirement					
1	The Supplier shall propose a plan for human resources on the basis of the basic human resource requirements stated below and shall provide the certificates of experience. The bidder must deliver evidence that all the proposed personnel has given its consent to participate in the "ICT Education Capability Building in Colombia" Project. The Purchaser will reserve the right to verify the evidence. In case the consent was not given, the proposal shall be rejected.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. However, the Bidder shall prove each human resource's capabilities in the specific field. For e-Portal, the Bidder shall provide for human resources evidence that those have prior experience in open source architecture development, deployment or training.				
3	The Bidder may propose a greater number of people to perform the work, but never less than those indicated below..				
Content Development & Standardization					
Conformity with the Component Objectives					
1	To provide national guidelines to develop and manage high-quality digital content (digital resource, learning object, unit of learning and courseware)				
2	To provide quality control guidelines to manage the quality of the content				
3	To provide content development and management manuals for professionals and teachers				
4	To provide national guidelines for Content Standardization (metadata, formats, copyrights, etc)				

5	To analyze the public education curricula for the selected 3 subject					
6	To manage and share the analyzed curricular data among various educational stakeholders as a reference					
7	To develop 33 courseware for the selected 3 subjects and provide them through e-Portal					
8	To enhance content development and management capabilities of the selected 5 RIC					
9	To qualify staff of the Content Development Research office (CDR) to acquire adequate knowledge of content development and management process and to transfer the knowledge to the participating organizations .					
10	To boost content development industry by creating a business model in content development					
General requirements						
1	The Purchaser requires to analyze and to develop the Courseware with 5 RIC on the subjects and grades specified in 4.5.					
2	The Purchaser also requires to develop standardized manuals for content development and national educational metadata guidelines that meets international standards and that serves all national and international stakeholders.					
3	The Bidder shall propose a plan to develop the Deliverables specified above that best serves the Purchaser's objectives. The methodology to be adopted for the Component shall be clearly stated in a proposed plan.					
4	The Bidder shall transfer all exclusive rights, including all transferable intellectual property rights (IPR) and use rights, in the deliverables, including their specification, algorithms and architectural approach. The Purchaser shall acquire the technical solution and specifically all rights of developed software, sources and comments as contained therein. Such rights shall include the absolute right to develop, or modify such software.					
5	The Bidder shall acknowledge that 5 RIC to be established during the Project are to be involved in the content development process. The Bidder shall propose a detailed plan to work 5 RIC including role and responsibilities of participating members (Refer to 4.9).					
6	There shall be no license fees, once the Courseware is handed over to the Purchaser.					
7	There shall be no limits on the number of users that can use the Courseware.					
8	The Supplier shall train 15 RIC members during the pilot project and 12-30 RIC members for each RIC (Total of 60 – 150) during the main content development process to maintain and modify the courseware, after the first Courseware is handed over to the Purchaser.					
9	The Bidder shall provide at least 2 sample content (either courseware or learning object) to demonstrate its experience and capabilities of content development and management.					
10	The Bidder shall propose the proportions of the content development between the Supplier and the Purchaser (5 RIC) and propose the development cost for 5 RIC overall. In addition, the Bidder shall propose a plan to support the operational cost of Colombian experts specified in 4.9 Role and Responsibilities.					
11	The source code for the courseware shall be supplied except any commercial software/system to be used.					
Technical & Functional requirements						
	Content Development and Management Manual					
1	The content development and management manual for professionals is to train staff of CDR of RIC to develop high quality, complex digital resources and courseware from analysis to implementation.					
2	The content development and management manual for teachers is to assist teachers to develop different types of content.					
3	The content quality evaluation manual for the Quality Control Teams is to guide the Teams to evaluate content developed both by professionals of RIC and by teachers.					
4	The process management manual is for coordinators of RIC to manage the overall process of content development. It is similar to the content development manual for professionals but focus on the management and evaluation sides of the process.					

5	4 Korean experts and 6 Colombian experts for 3 months are to jointly develop 4 sets of the manuals described in 4.5.				
6	Each set of manual shall focus on its target audience. The content development and management manual for teachers is to be written in simple language for non-IT savvy teachers to follow step by step.				
Content Development and Management Standardization Guidelines					
1	The content development and management standardization guidelines are to standardize everything related to content development and educational metadata to manage, maintain, search and share all the content developed for educational purposes.				
2	The content standardization guidelines are to include standardization of the metadata on the basis of LOM, combined with other international standards.				
3	A metadata template for RIC to upload a large quantity of metadata all at once to an e-Portal server is to be included. The template shall include all the attributes of metadata.				
4	1 Korean expert for 3 months is to develop the content standardization manual described in 4.5.				
5	The content development and management standardization guidelines are to be used for all educational content developed not only through this Project but also through others projects.				
Content Development					
1	The Courseware shall have a professional outlook and shall conform to the Visual Identity rules to be developed.				
2	The Courseware shall meet general requirements stated for training integrated systems in ISO, IEC, IEEE, IMS and other standards in this field.				
3	The Courseware shall be developed in compliance with the Sharable Content Object Reference Model, SCORM 2004 4th Edition or later completed.				
4	Regular computer users with limited permissions (i.e. not necessarily administrators) shall be able to install and run the courseware.				
5	The need to install any software not contained on the distribution media shall be avoided.				
6	The possibility to run and use the Courseware under iOS and Android is desirable.				
7	The Courseware shall use mixed-media formats, i.e. text, audio, video, animation, as well as interactive games and tests, appropriately combined to the learning aspects being delivered effectively.				
8	The Courseware shall provide function to restart at the same location, if training was halted or not fully completed. It shall be apparent to the user which sub-modules or lessons he or she has already visited and which modules he or she has successfully completed.				
9	The Courseware shall include tutoring options where appropriate.				
10	Determining a learner's progress and understanding shall be implemented following tests that are engaging and varied, containing at least some of the following functions (but not limited to these):				
	a. Click to answer tasks: clicking on elements in graphics and passive animations				
	b. Random selection of questions from pool of questions				
	c. Limited time (time function and display) and limited number of attempts (with display) with a scoring system				
	d. Single choice (with text, graphics and passive animations)				
	e. Shorting or putting things in the right order (e.g. steps in the process)				
	f. Drag and Drop Tasks, i.e. moving elements with the mouse to a designated place				
	g. Functions such as presentation of information				
	h. Feedback informing the learner whether the solution of a task was correct or incorrect				
	i. Detailed feedback to the learner after completion of a task. Recommending documents for required reading or self-study for particular subjects or training objectives				

	j. Hints to the learner about possible ways to solve a task				
	k. The Courseware shall provide start, stop, pause functions and cue points to control animations and videos.				
	l. The Courseware shall provide full text search capabilities through all the modules as well as metadata based search (for graphics, audio, video, etc.).				
	m. The Supplier shall create and record Audio portions as appropriate.				
	n. Any audio portions in the digital materials, added by the Supplier, shall be recorded by a native or a fluent speaker of the language being recorded.				
11	The Courseware shall be pedagogically aimed at the target audience (teachers and students from grade 1 to 11) and support and motivate them in the learning process; the manner in which the content is presented shall attract them and to entice them to read more and to want to continue with the other modules.				
12	Learning objectives shall be achieved through learning information content followed by testing of the training objectives, to ensure understanding.				
13	The courseware shall be gender, religion, and politically neutral.				
14	The digital resources in the Courseware shall be organized or generated as a learning object and a unit of learning.				
15	Each Courseware shall be designed to be delivered in, at least, the following ways:				
	a. As a cross-platform Web-Based Training (WBT) module that can be hosted on a SCORM certified Learning Management System (LMS)				
	b. As a stand-alone, self-contained Computer-Based Training (CBT) module distributed on DVD and running on a local computer under Windows XP/ or Vista or Windows 7 (or later) or Mac OS X 10.7 (or later) operational system				
16	The Supplier shall provide and maintain an online content development process management system and shall provide access for the Purchaser to this tool. Every stakeholder shall be able to access to this system and check the status of the component progress.				
17	The Supplier shall maintain an online version management tool or tracking system and shall provide access for the Purchaser to this tool. The Purchaser shall be able to directly file issues in this tool. Issues filed by Supplier shall be visible to the Purchaser. The version management tool shall provide information about what features have been resolved in what software version.				
18	The Supplier shall maintain a quality assurance log for all deliverables and shall share this log with the Purchaser. The Supplier shall also report on the performance criteria as agreed in the implementation plan				
Content Development and Management Supporting System					
1	Facilitate the analysis of current public education curricula of the Republic of Colombia, and analysis of other available resources, to identify skill/competencies defined for all grades of elementary, middle and high school.				
2	The formulation of objectives associated with the skill/competencies such that all skill/competencies are directly addressed and electronically connected to measurable teaching objectives.				
3	The development of assessment items (test questions) as needed to measure objective mastery against its competency standard. Each assessment item shall be electronically connected to the appropriate, corresponding objective and the corresponding competencies.				
4	Arrangement of the teaching objectives in a learning hierarchy order such that their prerequisite relationships are established and maintained.				
5	Development of learning content for each objective sufficient to enable (teach) student mastery of the objective, as demonstrated by successful completion of the associated assessment items.				

6	Arrangement of the objectives (with assessment items) into a curriculum to produce a completely integrated instructional curriculum comprised of course and lesson materials that are demonstrably tied back to the core competencies.				
7	The ability to automate the generation of assessment instruments (tests/quizzes, exams) for any lessons, combination of lessons or courses on-demand by members of the teaching staff.				
8	Sharing of common instructional materials across instructional programs or grade levels to re-use, rearrange and continually update the curricula while avoiding redundant effort in curriculum development and ongoing				
9	Searching, by tracing the connection from competencies to curriculum, and by other means (key-word search, etc.), in order to find and resolve areas of the curricula that are impacted by change thereby maintaining curriculum design integrity and fostering continually updating of curriculum quality.				
10	The system is to be used by subject-matter experts, instructional designers, and teachers. Result of its use will be a visibly integrated and sustainable teaching/learning system foundation based on measurable competency standards.				
11	It is desirable for the Bidder to supply with the system a database of pre-existing core competencies for K – 12 from other countries with conditions similar to that of the Republic of Colombia.				
12	The instructional content is to be developed for the teaching objectives as "re-usable learning objects" using a variety of popular tools, including HTML and MS Office package; MS Word and PowerPoint.				
13	Once developed, these independently-stored learning objects are to be sequenced into printed lessons, supplementary teaching aids, classroom sessions, CBT modules, or web-based learning, and are reused as often as they are needed.				
14	The Purchaser also seeks to obtain a software program or related capability that will enable a Learning Management System (LMS), any LMS abiding by SCORM standards, to be able to access the database created by the Content Development and Management Supporting System described above. This program, or application interface, would serve as "middleware" by making data developed and stored in a database through use of the Curricula Analysis Support System available to the LMS. In case the Content Development and Management Supporting System has integrated functions described below, no such program is required.				
15	Generate tests (random test generator) for on-line deployment to the students on demand from a computer station, ready for student response.				
16	Provide an interface that is easy for students at all grade levels to use to answer the questions, review or change answers before submitting the exam, and finally submit the exam.				
17	Upon submitting the test, the system will electronically grade the test, notify the student of the results (pass, no pass, grade, etc.) as well as notify via e-mail the designated teacher/instructors of the results.				
18	Provide the capability to offer on-the-spot review and remediation to the student, based on test results. Remediation will be based on the presence of lesson content directly associated with the test question in the Content Development and Management Supporting System database, and the ability of the desired program or interface to display the content per missed test question.				
19	Provide an automatic update to the LMS such that the LMS remains the system of record for all student test				
20	Similar to the process for generating exams, cause the system to generate actual Course/lesson materials for display through the LMS based on the content produced and stored in the database through use of the Content Development and Management Supporting System.				
21	Enable students to progress through a lesson, including the use of bookmark and other features standard for a LMS. Provide a variety of options such as "test required", read the lesson only" no test, etc.				

22	The program will work with "single sign-on"; a student can log into (sign on) the LMS, and upon requesting an exam or lesson, the LMS can open display the desired exam or lesson based on the database but without requiring the student to log onto another (middleware) program.				
23	In addition to sending lesson progress and exam results back to the LMS, the program will send test results back to the database such that the Content Development and Management Supporting System can perform its own analysis and tracking functions. For example, the test results will be stored for test question analysis in order to identify problems with questions and promote continual updating of the test questions in the database.				
24	The system shall be provided immediately after the commencement of the Project. The Bidder is advised to propose the pre-packaged system that meets all the requirements stated above or develop one prior to the commencement of the Project.				
25	In case the Bidder is to develop or customize a system, the Bidder shall demonstrate the system on the proposal and, shall provide a plan to develop one prior to the commencement of the Project with the detailed timeline.				
26	The Bidder is advised to provide a curricular database of other countries (one or more) on the system it is proposing as a reference to develop Colombian curricular database. Such data shall be either in English or Spanish. Colombian Basic Standards of Competences shall also be considered.				
27	The Bidder is advised to provide a web site URL that the Purchaser can try the system or at least view system demo or presentation video clips.				

Role & Responsibilities

1	The Supplier shall propose a role & responsibilities model on the basis of the requirements stated below.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. The Bidder shall present the point of change management clearly.				

Human Resource Requirement

1	The Bidder shall propose a plan for human resources on the basis of the basic human resource requirements stated below and shall provide the certificates of experience. The bidder must deliver evidence that all the proposed personnel has given its consent to participate in the "ICT Education Capability Building in Colombia" Project. The Purchaser will reserve the right to verify the evidence. In case the consent was not given, the proposal shall be rejected..				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. However, the Bidder shall prove each human resource's capabilities in the specific field.				
3	The Bidder may propose a greater number of people to perform the work, but never less than those indicated below"				
4	The Bidder shall propose a human resource allocation plan to be clear on which human resource will perform which role of the project.				

Teacher Training

Conformity with the Component Objectives

1	To analyze the ICT use training programs for teachers in Colombia to define the general guidelines to develop a teacher training proposal.				
2	To develop ICT teacher training programs focused on strengthening and deepening skills for the educational use of ICT in the classroom practices and for the digital resource development skills of the teacher training component.				
3	To develop evaluation strategies in use of ICT skills for teachers taking into consideration some Colombian systems, other systems and the standards that will be defined				
4	To define the ICT Skills Standards for Teachers (ISST) according with "ICT competencies for professional development of teachers" of MOE.				

5	To develop the classroom courses, virtual courses, and ICT teacher training materials to train teachers				
6	To develop ICT Skills Standards for Teachers (ISST) to measure the competence of the trained teachers.				
7	To train 120 Master Teachers to train 16,000 Leader Teachers				
8	To train 16,000 Leader Teachers at 5 RIC to contribute to reduce the educational gaps between regions and to spread the impact of the training to all the schools of the country.				
9	To set up e-portal system both for teacher training program and for teachers' ICT integrated lesson implementation (competence evaluation, virtual training courses, materials sharing, and teacher's networks)				
10	To create or boost teacher's network to share their ideas and experiences (resources, lesson plans and others)				
General requirements					
1	The Purchaser seeks to train 120 Master teachers and 16,000 Leader teachers.				
2	The Purchaser also seeks to develop ICT teachers training program/materials and ISST (ICT Skills Standards for Teachers) with evaluation Items.				
3	The Bidder shall propose a plan for the Teacher Training component to develop or perform the Deliverables specified in 5.5 that best serve the Purchaser's objectives. The methodology to be adopted for the Component shall be clearly stated in the proposed plan.				
4	The Purchaser shall acquire all exclusive rights, including all transferable intellectual property rights (IPR) and use rights, in the deliverables that include all training materials. All developed materials shall have the institutional image of the Ministry of Education of Colombia and the different graphic designs to be proposed shall be approved for the Ministry of Education of Colombia.				
5	The Supplier shall conduct the training program evaluation quarterly and the methods shall be included in an implementation plan.				
6	All softcopy of the training materials and the document produced during the Project shall be provided to the Purchaser upon completion of each sub-component.				
7	The Bidder shall propose a plan to increase the involvement of teachers in creating content with quality.				
8	The Bidder shall provide sample materials including teacher training programs and manuals to demonstrate its capabilities in this field.				
9	The Bidder shall propose collaboration strategies between 2 Research teams for successful teacher training				
Technical & Functional requirements					
ICT teachers training program					
1	The ICT Training Research Team consisting of 4 Korean experts and Colombian research team comprising 5 experts, 12 specialists and 10 teachers is to jointly develop 4 sets of the materials described in 5.5.				
2	The ICT teacher training program is to improve teacher's ICT competence. The program is to be defined and clarified through analyzing the national guideline about Colombia teacher's competence (ICT competencies for professional development of teachers), ISST (ICT Skills Standards for Teachers of Korea, and international teacher's ICT skills standards such as ICT competence standards for teachers of UNESCO, NETS-T (Standards for Tech-Using Teachers) of ISTE (International Society for Technology in Education) in the USA, National Professional Standards for Teachers and Teacher ICT Skills of Australia and others that the bidder consider relevant for the project.				
3	The ICT Teacher training program is to be based on the defined competence and focused on improving teacher's competence of instructional design and pedagogy for using ICT in teacher's class, and also enhancing development skills of teaching materials.				
4	The ICT Training Research Team is to set up the framework of ICT teacher training to validate it with MOE and to develop the training program				

5	Training programs shall be designed for blended learning format. This program shall contain a classroom workshop and 2 virtual courses (pre- and post- session). Classroom activity and virtual activity shall be so closely connected and integrated that participant teachers could keep on going their activity continuously so that they can build a product related to their practices.					
6	Formats for program materials are:					
	a. For Master Teacher - Both digital format (DVD with multimedia design) and printed format (binding book)					
	b. For Leader Teachers - Digital format with multimedia design (DVD)					
7	The pre- and post-virtual training programs for Leader Teachers and for Master Teachers, shall be implemented in the platform available at the time of implementation; e-portal is a priority option.					
8	The Bidder shall propose a differentiation strategy between the manuals for Master Teacher and the manuals for Leader Teacher.					
	Teacher Training					
1	The ICT Training Research Team is to jointly train 120 Master Teachers. 4 Korean experts are to lead the Master Teacher training with the assistance of ICT Training Research Team. ICT Training Research Team shall play a role to support, monitor, and evaluate the Leader Teacher Training for early 3 months.					
2	The Supplier shall be in charge of the Master Teacher training and the Purchaser shall be responsible for the operation of the Leader Teacher training while the Supplier provides a management service throughout the component period.					
3	The objectives of Master Teacher training are for Master Teachers to increase the competence in:					
	a. Instructional design, pedagogy, ICT skills, and evaluation for implementing ICT integrated lesson					
	b. Transferring the knowledge and competences to Leader Teachers					
	c. Managing both virtual training and classroom training					
	d. Leading the virtual and face-to-face teachers' network after the training for sustainability of the program					
4	Master Teacher training is to be held at the Central RIC. 2 multimedia classrooms equipped 30 computers and 2 general classrooms equipped 15 computers at the Central RIC shall be utilized for the Master Teacher training.					
5	The ICT Training Research Team including Korean experts shall manage the entire Master Teacher training course and train 120 Master Teachers for 2 months.					
6	The Master Teacher training is to be held for 130 hours, 7 weeks per session;					
	• Pre-virtual course (30hrs, 3 weeks)					
	• Classroom course (80hrs, 2weeks)					
	• Post-virtual course (20hrs, 2weeks)					
7	After the 120 Master Teachers training, the ICT Training Research Team is to revise and adjust the training program and materials (for Master Teacher and for Leader Teacher) with the feedback and responses from the training for 1 month.					
8	The Supplier shall prepare and send the Leader Teacher training materials in a digital format to teacher training coordinators of RIC. The Supplier shall perform the change management service to the coordinators from RIC .					
9	The Master teacher training and Leader Teacher training should be conducted in Spanish.					
	ICT Skills Standards for Teachers (ISST) and evaluation items					
1	The ISST Research Team consisting of 2 Korean experts and Colombian research team of 3 experts, 6 specialists and 3 teachers is to jointly develop the deliverables specified in 5.5.					
2	ISST is the framework and guideline related to the Colombian teachers' ICT competence in creating ICT integrated lesson plan and applying ICT in their classroom practices. ISST Research Team is to define the Colombian teacher's ICT competence standards related to ICT Competencies for professional development of teachers of					

3	ISST should provide information for the Ministry of Education of Colombia to manage Colombian teacher's ICT skills efficiently and to make a plan for educational policies related to improving teacher's ICT competence improvement				
4	The evaluation items of teacher's ICT competence are to be developed on the basis of the ISST framework. Different tools and forms of items such as multiple-choice questions, open-ended questions, writing questions, and performance test items are to be developed. ISST Research Team shall specify the evaluation strategies of ICT teacher training program.				
5	3 sets of evaluation sheets for Leader Teachers are made with 150 items. Each evaluation sheet is to contain 50 items. 3 sets of evaluation sheets are all the same sets in terms of competence to measure, number of items, and items difficulty. The first evaluation sheet is to be used at the start of the training to measure teacher's ICT competence level before the training. The second evaluation sheet is to be used at the end of the training to measure teacher's changed ICT competence after the training. The last sheet is to be used in the future on monitoring process or in the case evaluation items open accidentally to teachers during the training.				
6	Each evaluation item has meta information (description sheet) like criteria, competence, level of difficulty, level of validity, item format, etc.				
7	The evaluation items, evaluation tools and statistics reports of the evaluation and measurement system are to be uploaded to the evaluation system of e-Portal to be developed (of available system).				
Role & Responsibilities					
1	The Supplier shall propose a role & responsibilities model on the basis of the requirements stated below.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. The Bidder shall present the point of change management clearly.				
Human Resource Requirement					
1	The Supplier shall propose a plan for human resources on the basis of the basic human resource requirements stated below and shall provide the certificates of experience. The bidder must deliver evidence that all the proposed personnel has given its consent to participate in the "ICT Education Capability Building in Colombia" Project. The Purchaser will reserve the right to verify the evidence. In case the consent was not given, the proposal shall be rejected.				
2	The requirements below are only guidelines. The Bidder may propose a plan that best serves the Purchaser's objectives of the Component. However, the Bidder shall prove each human resource's capabilities in the specific field.				
3	The Bidder shall propose a team of human resources to perform the work specified below as performed by 1 person as long as the team's performance is guaranteed and it meets the duration requirement below.				
Project Management					
Site Visit					
	Work Scope				
1	RIC site visits - 2 Korean experts along with 5 local experts will visit all 5 RIC and selected participating organizations for the first month of the Project to interview RIC stakeholders and gather the information stated on the bidding documents:				
2	Drafting extensive analysis report on the RIC readiness				
3	Drafting "Quarterly readiness checklist template" for quarterly review of the RIC progress in terms of readiness				
	Requirements				
1	Two (2) Korean experts with related academic and field experience will work at the MOE with five (5) local experts for 1 month. Local experts will be selected by MOE and the cost related to those local experts will be covered by the Supplier.				

2	One of the two Korean experts must have IT-related educational background with IT hardware handling experience. The other must have ICT-education related educational background with the same field experience. The minimum work experience for all the two experts is 10 years.				
3	Two (2) Korean Project Readiness Work Experts shall come to the Project site for within fourteen (14) days after the commencement of the Project, preferably together with the Project Management Expert.				
Project Manager					
	Work Scope				
1	Development of the Project implementation plan and schedule				
2	Development of the basic design concept				
3	Development of the implementation evaluation methodology				
4	Development of the ICT Infrastructure & e-Portal hardware supply plan				
5	Development of the e-Portal development plan				
6	Development of the strategic methodology for content development				
7	Development of the strategic methodology for teacher training				
8	Development of the maintenance plan				
9	Development of the quality control plan				
10	Development of the risk management plan				
11	Monitoring the whole process of the Project Management				
12	To make a Design for Road Map of this project to sustain to the Next stage				
	Requirements				
1	One (1) Korean Project Management Expert with related academic and field experience will work at the designated place by the Ministry of Education Project Officer for the entire period of the Project implementation				
2	One (1) Korean Project Management Assistant (Project Leader) with related academic and field experience will work along with the Project Management Expert for the Project implementation period. The Assistant shall support the Project Management Expert and visit all RIC sites regularly.				
3	The Project Management Expert and Project Management Assistant must have overseas project implementation experience of the comparable size of this Project. The minimum work experience for the expert is 10 years with bachelor's degree for the Project Management Expert and 5 years with bachelor's degree for the Project Management Assistant.				
4	The Project Management Expert shall come to the Project site within fourteen (14) days after the commencement of the Project.				
Implementation Schedule					
Conformity with the Project Implementation Schedule					
1	The Bidder shall present the implementation schedule that best serves the Project objectives.				