प्रसार भारती
PRASAR BHARATI
भारत का लोक सेवा प्रसारक)
(India's Public Service Broadcaster)
राष्ट्रीय प्रसारण एवं मल्टीमीडिया अकादमी
NATIONAL ACADEMY OF BROADCASTING & MULTIMEDIA (NABM)
रेडियो कालोनी, किंग्सवे / Radio Colony, Kingsway,
दिल्ली-110009 / Delhi-110009

No. NABM/Project Works(Plan)/2020-21

तत्काल/**Immediate**
Date: 19.11.2020

To:
All the concerned Firms/Agencies/Vendors/Suppliers etc.
related to e-LMS Software and the accs. items under e-Learning Facilities
in India.

Subject: Inviting budgetary quotation/proposal with approx. cost and comments/ suggestion, if any, for supply, installation, testing and commissioning of e-LMS Software and the accs. items for NABM, Prasar Bharati, Kingsway, Delhi under project works.

Madam/Sir,

As per the above mentioned subject, a copy of the technical specifications is attached herewith for your kind perusal. It is requested that the technical specifications attached may please be seen and your budgetary quotation/proposal with approx. cost for all the items mentioned in the technical specifications and comments/ suggestion/feedback on the specs., if any, for supply, installation, testing and commissioning of the e-LMS Software and the accs. items for National Academy of Broadcasting and Multimedia (NABM) for e-Learning Facilities under project works may please be sent to undersigned by email immediately (within 15 days).

This is issued with approval of the competent authority.

Yours faithfully,

Enclosure: As above (Copy of the Technical Specs.-25 pages).
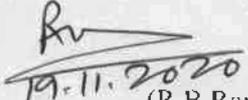
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For Addl. Director General

राम बचन राम/RAM BACHAN RAM
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National Academy of Broadcasting & Multimedia
रेडियो कालोनी/Radio Colony
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<u>**Final Draft Copy**</u>

Scope of Work, Technical Specifications & Features for Development, Supply, Installation, Testing and Commissioning of cloud hosted e-LMS software solution and other items for training management & delivery at NABM

1.   Overview:

National Academy of Broadcasting and Multimedia (NABM) is the apex in-house training Academy of All India Radio & Doordarshan under Prasar Bharati. NABM primarily caters to the training needs of about 26000 personnel who are working in various wings such as Program, Engineering, Administration and Finance in Prasar Bharati. This academy has two main campuses - one at Delhi and the other at Bhubaneswar. Besides this there is a regional academy, known as RABM, Shillong, functions under the control of NABM Delhi. The Academy conducts about 150 courses and trains about 3500 personnel every year. Sometimes, based on the demand, it also conducts training for other organisations on payment basis. It also conducts training programmes in collaboration with other organisations. Officials from broadcasting organizations of the neighbouring countries also participate in some of the academy's training programmes. At present, NABM conducts conventional face-to face and online (webinar) trainings. Most of the processing, starting from invitation of nomination, selection and finalisation, issue of call letters, etc. are carried out manually. NABM has hostel facilities. Participants attending training mostly stay at NABM hostel. NABM has a library. NABM, Delhi also conducts departmental promotional examination in various cadres in Prasar Bharati.

NABM intends to implement customised online Learning Management System (eLMS) software to manage the training courses conducted from time to time and to deliver training programmes through interactive online platform and through off line system including conventional face-to-face. The system shall also facilitate NABM to reach out to more trainees digitally through the integrated eLearning management system. After development of the e-learning management system software, it will be suitably integrated in Prasarnet (an intranet of Prasar Bharati), and NABM part of Prasar Bharati website with desired dashboard, search, update and other related information.

2.   Scope of Work:

The scope of this project shall be the development, supply, installation, testing and commissioning of the e-LMS software solution for NABM. The scope includes broadly the following:-

i.   Setting up of the customized e-Learning Management System (LMS) for conduction of Training Programs. It should include preparation of Annual Training Calendar(ATC) by taking inputs from various sources; Invitation, Processing and finalisation of nominations for various training programmes; Provision for registration of external candidates from other institutes; Data base of Resource persons (internal and external), Design of course by selecting suitable/ relevant topics and identification of Resource Persons/Faculty; preparation of Estimate, etc.

ii. Development of content management module for generation and archive of Training Content in the form of video, audio, PPT, Lessons, Handout for each course. Creation of interactive content including provision for tools/ software. Display and download of video training clips on various topics/ Training subjects, etc.

iii. Development of Training Database module integrating employees records as available in the existing Human Resource Information System (HRIS) of Prasar Bharati in consultation with IT Division, Prasar Bharati.

iv. Setting up of e-Learning System for conduction of interactive on-line training Programmes, off-line training programmes including the conventional face to face.

v.   Provision for conduction of test and feedback including its analysis, reports and generation of training certificates.

vi. Hostel booking system and automatic allocation of rooms to participants including rent calculation and payment collection / issue of receipt to the occupants.

vii. Development of Library Management System.

viii.Linking of e-LMS with PRASARNET and NABM part of Prasar Bharati websites along with dashboard and various reports.

ix. Updation of NABM part of Prasar Bharati website to incorporate relevant information/ function related to e-LMS for public consumption/ information.

x. Development and deployment of mobile Applications in iOS and Android platforms.

xi. Development of module for departmental and other examinations. It shall include preparation list of eligible candidates, scheduling of examination dates, Creation of Question bank, Preparation of Question Papers, Finalisation of Examination centre. Allocation of examination centre, arrangements for conduction of examination.

xii. Hosting of complete software solution in a cloud space provided by Prasar Bharati. However, the application should be developed by the vendor in consultation with IT Division, Prasar Bharati regarding interface, data base etc. All Software licenses should preferably be on perpetual basis.Software having annual license fee should be clearly mentioned.

xiii. Firm is to provide complete code and associated software for hosting.

xiv. Supply, testing and commissioning of 5 sets 75" inch or higher Interactive Display System with OS- Android & Windows, and Cameras, accessories, stand, etc.(specification as per attached annexure-A)

3. Software Licensing

i) All licenses provided for the system, OS and application software should be perpetual and in the name of Prasar Bharati.

ii) Software having annual license fee should be clearly mentioned.

4. Technical Specifications and features

Entire process for conduction of courses online/offline/ face to face at NABM Delhi, Bhubaneswar and its regional centre at and other places as and when required starting from preparation of training calendar, registration of participants along with recommendation from Directorates, Zonal Offices and Station/Kendra Heads, study course materials repository, design of training course, conduction of training (on-line, off-line, face to face), conduction of test, feedback and course evaluation shall be automated by deploying an appropriate eLearning Management System. The system shall conform to the following main features:

4.1 The specifications describes the functional requirements and features for the following integral parts of the cloud hosted solution of e-LMS:

i. Setting up of Training Management system which shall have provisions for Annual Training Calendar by taking inputs from various sources; Development of Training database including integration of employees records as available in the existing Employee Master Dataset (EMD) of Prasar Bharati (API to access and synchronise employee data set will be provided by Prasar Bharati); Invitation, Processing, finalisation of nominations including issue of confirmation letter for various training programmes; Provision for registration of external candidates for certain courses which are meant for outside institutes; Data base for Resource persons both from within Prasar Bharati and other institutes/organisations; Database for Fee structure for paid courses and payment of Fee to Resource Persons; Design of course by selecting suitable/relevant topics and identifying resource persons; Training budget; Preparation of Estimate; Approval of course schedule, topics, Resource Persons, Estimate, etc.

ii. The vender will create a database on training management. Details of existing employees as available on HRIS(Human Resource Information System) can be shared and used by the training database. Therefore, integration of employee data with the training module is necessary. IT Division, Prasar Bharati will develop and provide API on the call by software developed by vender for allowing employee data updation for use in the training management module.

iii. The customised e-Learning Management System for conduction of Training Programs both in online/offline mode should have content management module for generation and archive of Training Content in the form of video, audio, PPT, Lessons, Hand out for each course, creation of interactive content including provision for tools/ software, display and down load of video training clips on various topics/ training subjects. It should be able to conduct interactive on-line training programmes (similar to Video Conference/ Webinars), and off-line training programmes in addition to conventional face to face, provision for creation of Test questions, conduction of Test and its evaluation, development of feedback mechanism including analysis and evaluation report, generation and issue of training certificates, recording of training sessions and archiving of content.

iv. Setting up of the customised Library Management System, Hostel Booking Management System, and conduction of Departmental Promotion Examination and Management.

v. Development of Mobile Applications for both iOS and Android version.

vi. Deployment of Social Collaboration Tools.

vii. Hosting the complete software solution in a cloud provided by Prasar Bharati.

4.2 Some of the major modules of the eLMS system are described below:

4.2.1 Registration System in e-LMS:

i. There shall be a registration mechanism for all the users. Registration form is to be submitted online for registering to the portal, generate user ID and Password for new user.

ii. In case, password is forgotten, "forgot password" functionality should be available which will send the password to the registered e-mail address and mobile number of the user.

iii. Only authorised users/system administrator should be able to select the role of Resource Person/faculty. For others the default role will be as Trainee/user.

iv. The registration form may have fields like First Name (Mandatory), Last Name (Mandatory), Post, Posted at, Employee **ID No./ IRLA** No. /Employee Code No./Enrolment No.(Mandatory), E-mail Id, Mobile Phone No.(Mandatory), Password, Confirm Password, and any other fields to be indicated/finalised in SRS(Software Requirements Specification). However, for existing employees these fields are to be populated from the Employees database of the application.

4.2.2 Content Management & Distribution System

(i) Upload Any Content - Upload PDFs, PPTs, Videos, Tests, question sets, assignments, etc.

(ii) Create Structured Courses - Create sub-heads and list content in sequence for step-by- step learning.

(iii) Design Learning Path - Set rule sets to lead the participant through a learning path and Set Quiz based check points to assess his/her learning.

(iv) Learner Insight - See learners live progress and assess performance at various level, topic and learning object.

(v) Course Insight - Get participation insight, completion levels/stages, progress and more.

(vi) Emails and Reminders - Send new announcements emails and reminders to ensure high participation and completion.

(vii) Tag content according to the Subject/Topic/Level.

(viii) Export content into HTML ready format.

(ix) Overall Control of Content - Make content visible to select Class, Create Sequential Learning Plan and Generate Tests/assignments.

4.2.3 Institution Learning Environment (ILE)

ILE provides an eco-system for content consumption. The solution component helps institution setup online presence by creating virtual institutions, centers, courses, classes and schedules. The solution also helps analyse the performance at the level of classes, courses, or individual participant. The solution provides self-appraisals through mockups, performance tracking over a period, socialized environment for academic interaction. The major functions include:

i. Consume Content - Consume content in a sequential order, read booklets, watch lectures, videos and visualize better using animation.

ii. Detailed Analytics - Self and comparative analytics, speed and accurate analysis, strength and weakness analysis.

iii. Discussions - Participant can ask doubts from web and mobile/tablet devices, simply click a pic and post a doubt and Resource Person/ Faculty and participant collaboratively answer the doubts.

iv.

v. Live Tests - Classroom tests with instant feedback to the Resource Person/ Faculty, results get synched instantly and participant can see their rank in the rank list while sitting in the class.

vi.

vii. Resource Person/ Faculty can push course announcements to participants - New content, pending assignments, answers to the doubts posted in the LMS

viii. Notifications to Resource Person/ Faculty - Alerts on critical participants, alerts on course progress, new doubts posted etc.

ix.   Go Social - Social learning tools, engage/collaborate on any academic subject, stay connected beyond the classroom, collaborative doubt solving even after the class is over,

x.   Messaging – Option to send instant messages to Resource Person/ Faculty / Participant who are part of the course individually and group messaging.

4.2.4 My Courses:

i. Resource Person/Faculty/Trainer specific:

a)   The My Courses page will have list of all the courses that are available in the LMS system.

b)   Resource Person/ Faculty can add new courses from this page.

c)   Resource Person/ Faculty will be able to perform Create, Update and Delete functions for any course from the My Courses page.

d)   Creation of a course should include uploading of videos, PPTs, PDF files, Text Documents, Links of various other references etc.

e)   Timeline of the course will be decided by the Resource Person/ Faculty.

f)   The Resource Person/ Faculty will be able to view all the other courses present in the e-LMS.

ii. Participant/Trainee specific:

a)   The participant should be able to view all the courses/program present in the My Courses page.

b)   To access any specific course the participant/ trainee needs to enrol for that specific course.

c)   After enrolment he/she will have the access to all the contents and schedule related to the course on the course page.

d)   Participant should have access to the Resource Person/ Faculty of that course for clarification of doubt related to the course.

e)   Each course will come with specific timeline/schedule and participants need to complete the course within that period.

f)   Certificate for each course will be provided after successful completion of the assessment task and exam/test performance report related to the course.

4.2.5 My Profile:

i. The My Profile page will have information specific to the Resource Person/ Faculty or Participant who has logged in. This will include: Name, Designation, Mobile Number, Email Address, Passport Size Photo, Change Password, Office Address, Contact Information, Qualifications and Works Experience etc. as per SRS.

ii. On this page User can upload a Photograph, write about their academics, Achievements, etc.

iii. User should also have possibility of changing his profile to be verified by admin. later.

4.2.6. Dashboard:

Dynamic dashboards to be appeared on login, may be separate for Participants/Visitors/trainees, Resource Person/ Faculty and Administrators. The functions and facilities provided to different type of users will appear at the dashboard.

i. Administrator Dashboard:

a) It shall have complete user management to assign with the roles (Participant, Resource Person/ Faculty, Staff, trainee etc.) and their functionalities to various users and user groups.

b) Multiple administrators including super-admin with different roles may be allowed.

c) Provision for administering and customising the e-Learning Management portal.

d) Provision for publishing and updating the Training Calendar.

e) Provision for issuing the call letters on the basis of nominations enrolled by the trainees and the recommendations received from the competent authorities.

f) Allotment of courses to the different faculty members.

g) Provision for approving issue of training certificates for Participants/ trainees based upon the training performance report from the Resource Person/ Faculty.

ii. Faculty/Trainer Dashboard

a. The Resource Person/ Faculty should be able to overview the courses allotted to him on the Dash-board but to access any course the Resource Person/ Faculty will need to go my courses page.

b. Resource Person/ Faculty shall be able to upload and update study/reading material related to the course of the training. The study/reading materials shall be in the formats like, Doc, pdf, PPT (password protected), audio, video, image etc.

c. Conduction of quiz, examination/test and feedback on line through the portal and evaluation of the trainees online.

d. Resource Person/ Faculty shall have a discussion centre/chat where trainees can interact with him during conduction of e-Learning courses.

e. Resource Person/ Faculty dashboard should have a News and Notification Section.

f. The Resource Person/ Faculty should also be able to view the number of trainees/participants attending the course.

g. The Dashboard shall have dropdown navigation menu of Profile, My Courses and Log Out.

h. My Courses Page will display all the Courses present in the Portal.

i. The Resource Person/ Faculty should have facilities for Downloading Training documents, Quiz Participation, quiz/test results and performance of individual participant also.

j. Provision for generation of the training performance report and certificates.

iii. Participants/Visitors Dashboard:

a) The participant may submit his/her nomination in the format for the courses available for the enrolment and should be able to take the print out.

b) The participant dashboard should have My Courses section where he/she can see what courses he has enrolled and also what other courses are present overall.

c) To access any course participant will need to go to that specific course page either from Dashboard or My Courses page.

d) There should be a discussion/question-answer centre where participant can ask query and doubts related to the course.

e) The Dashboard must have a News and Notification centre.

f) The Dashboard shall have a navigation dropdown menu of Profile, My Courses and Log Out.

g) Interface to get the feedback of the training programme.

4.2.7 Test/Assessment Task and Certification:

i. Once the participant completes a course he/she should be able to appear in Online Test/examination regarding that specific course.

ii. The Resource Person/ Faculty should provide the multiple choice questions, options and answer to the system for the task /test/exam but he/she will not have any control over the exam.

iii. Computer will acknowledge the assessment Task and result/performance report will be generated accordingly.

iv. Certificate should also be sent to the participants who have passed in the exam/test.

4.2.8 Other features

i. <u>User Management</u> —For managing different type of users like Participants/Trainees, Faculty members, the admin staff and the guests. Admin would have the rights to access the user database and add/ modify/ delete the users. Admin would have the provision to allocate the faculty member to the classes/courses.

ii. <u>Content Management System (CMS)</u>- Content management system will help the e-LMS to hold the data which would be built using the content development module. Content of the website, Mobile applications would be managed by the CMS. All the course related data, Images, Videos, PPTs, PDFs and the documents are managed by CMS. Admin would be able to manage the Course/ Papers related information using this CMS.

iii. <u>Single Sign On (SSO)</u>: Compatibility provisions are to be made. The authentication service using LDAP (Lightweight Directory Access Protocol) will be

provided by Prasar Bharati. The authorisation part is to be developed by the firm along with its integration with the SSO.

iv. <u>Live Chat-</u> Live Chat could be built to enable the users of the system to communicate with each other. This feature can be internally used in different instances. For example, users will be able to chat with each other about a topic. Live Chat could be reused in this case and similarly in many other modules also.

v. <u>Notification System-</u> Notification system enables the application to send messages to users about their activities. Messages are through SMS, Email or push notifications to the mobile applications if the user is using the Native mobile application. For this application, software solution shall be provided by the vendor and SMS gateway shall be managed by the department (Prasar Bharati).

vi. <u>Content Development Tools:-</u> There shall be integrated third party tools for creating multimedia contents for eLearning courses. These tools must be capable of creating good quality interactive multimedia contents like storyline, presentations, animations etc. for the online courses. The generated contents shall comply HTML5/CSS3/ISO Standard or the latest standards for authoring responsive eLearning course materials. Perpetual Licences shall be preferred. However licencing details of all tools may be provided by vendor.

vii. <u>Integration with compatible third-party tools-</u> Proposed application would be built using the latest technologies and the proposed architecture is SOA (Service-oriented architecture) compliant, so any third party applications/ tools can be integrated with the application.

4.3 Library Management System/Virtual Library:

i. Internet based on-line Library Management System application which shall be used to develop online application.

ii. Customized data must be used to the online application by Retrieval and Preservation of present library data of NABM Delhi & Bhubaneshwar and RABM Shillong.

iii. Create distinct library users list based on their roles and permissions.

iv. Provision of at least 1000 users login with restricted facilities and their permission controlled by Library administrator for Authenticate users at their login.

v. Real-time provision of the list/catalogue of books the users can borrow & facility to reserve books that are available.

vi. A status page for all users to view books reserved by them. Facility to cancel the reservation for a book made earlier.

vii. A status page for all users to view books borrowed by them, their individual due dates and their individual penalties if any.

viii. Providing interface to library administrator for adding or deleting books to staffs.

ix. Provision of Biometric authentication for the issue/return of book.

x. Provision of SMS/Email for the issue/return of books.

xi. All the database should be hosted in Prasar Bharati Cloud.

xii. User-friendly data entry for future updating of books records and the report generation as per the requirement.

xiii. In addition to this a Virtual Library will be used for storage of contents specific to the courses by Tutors/Trainers and Trainees.

xiv. The library shall be capable of storing and retrieval of multimedia contents in most of the formats like audio, video, graphics(bmp, jpg, tiff, gif, etc), animations, presentations (ppt, pps, etc), documents (pdf, doc, etc.),etc.

xv. Robust and scalable content management system with proper indexing and tracking shall take care of the multimedia material in the library.

4.4 Conduction of Departmental Exams and Management System

i. Application should have a separate module for departmental and other examinations.

ii. It should have capability for preparation of list of eligible candidates from existing HRIS employee database and other applicants.

iii. It should have capability for Scheduling of examination dates, issue of notification, finalisation of Examination Centre, allocation of examination centre, issue of admit card, arrangements for conduction of examination/test etc.

4.5 Hostel Management System-

i. The hostel management section shall have information regarding Address and Contact information of the hostel premises of NABM.

ii. Display of room availability status, provision for on-line booking, Automatic Room allocation for Participants/Trainees, etc.

iii. Users will also be able to send the on line request for booking of rooms.

iv. Users shall also get the confirmation of booking through portal/email.

v. Hostel booking system and automatic allocation of rooms to participants including accounting, rent calculation, payment collection and issue of receipt to the occupants of the hostel rooms. On-line payment provision.

vi. Participant Move in / Move out management.

4.6. Mobile Applications

In order to increase the flexibility of access in the learning portal, the portal is to be made accessible through developing and deploying the mobile applications in the major mobile platforms viz. Android and iOS. The mobile applications have to be made available at the respective play stores for the download. These applications shall communicate with the servers. The services of the portal have to be integrated in the mobile applications. The detailed design of the applications has to be finalized as per SRS document to be submitted by the bidder after placement of order. The developer has to ensure the fixing of bugs in both the applications has to be under taken by releasing updates during the warrantee period and further as per SLA(Service Level Agreement).

i. **Android Mobile Application.**

Android native application will be developed using the latest Android Technologies which will be available for all the Android bases Smart Phones and Tablets. RESTFUL services of the web application would back the Android application for communication with the server. All the major functionalities, discussed and finalized in SRS document will be available through mobile application. Any push notification to the mobile application which are send from the Notification Module in the server will be received by Android Application. Google cloud Messaging will be implemented for this feature. Android application will be published in the Google Play Store and will be available for all Android users across the globe.

ii.   **iOS Mobile Application.**

IOS native application would be built on latest Apple Mobile technologies and would be published to Apple App Store. RESTFUL web services in the web application would provide communication with the web application. For notifications, Apple Push Notification services from Apple are used.

4.7   Social Collaborative Platform

The portal shall be integrated with the social collaborative platform in order to enhance the interaction among the users for powerful learning and effective communication. Following Web 2.0/Web 3.0 features and better shall be incorporated:

i.   **Communities** — Bulletin board, Media Library, Events Management: Users will be able to create a community, invite other people to that community, discuss on topics, manage events etc. Photos/Images, Videos and Documents could be shared using communities. Users who are part of this community would be able to send messages to other members and also share the news in the Bulletin boards. Moderator of the Community would be able to control the activities in the community.

ii.   **Profiles:** Every User of the application would have a profile in the system. A search functionality would be provided which will enable the users to search for people with key words which includes, First Name, Last Name, Designation and Specialization. Authenticated users can view the profile of the user after the search. Admin would be able to set the parameters which has to be shown from the CMS.

iii.   **Task Management/ Activity Management:** Task Management/ Activity Management would allow the users to create task sheet for themselves and for the team members. Documents can also be attached to the tasks, tasks can be shared across via Email, SMS, etc. There will be a provision for the users to insert comments on the activities.

iv. File Sharing: Documents, Videos, Images File sharing is an auxiliary service which will cater its services to other modules of the applications. Documents, Videos and Images are some of the media content which can be shared in this module.

v. Wilds: In this module users can add/ edit/ delete content in collaboration with other users. Text is entered using a rich text editor like CK Editor. A wiki can have any number of editors and the content evolves with time.

vi. Blogs: Blogs are the sites which consist of posts. A post has an owner/ author and others who have the access to the blog can read it and can share/ comment/ like the blog. Once published, only the author will have the permission to delete the blog or to edit the blog. Some blogs can be password protected, so that even, if it is published, only users authenticated can read it.

vii. Podcasts: Users can publish their digital media, audio, video, pdfs, PPTs, or ePubs files to the users who are subscribed to the author/ presenter. The media is streamed to the subscribers and they do have an option to download the file for off line usage. Presenter or the author will have to choose whether to send the podcast to all the users or to a community or to selected user.

viii. RSS Feeds: RSS (Rich Site Summary) is a web feed which will be updated to the users who are subscribed to the site updates. These updates are generally related to the web site updates, when a new news item is published, a new document is uploaded or an event is created. Admin would be able to control what updates on the sites will go as RSS Feeds.

ix. Bookmarks: Bookmark is a Uniform Resource Identification (URI) that is stored for future reference. All the modern web browsers include bookmark feature. This is a browser functionality and in the application also we can provide a button on clicking which bookmark of that page will be added to the browsers bookmark list/ favourites list.

x. Social Share —Facebook/ Twitter: Proposed application would be integrated with Facebook/ Twitter for sharing content by users and the admin as well. This will work as an advertising platform as well as communication platform for all the application users. Any news/ events about the Academy can be shared to both the platforms using a single window.

4.8   E-Learning System

i.   The solution has provision to conduct the online training programmes. The system shall allow trainers to author, manage, and publish interactive instructional information including screen cast demonstrations, simulations, and other interactive content. The eLearning system has to be integrated with the Learning Management System. Portal must be sufficient flexible to customize the learning journey and to customize the look and feel of the learning environment.

ii.   Cloud based Multimedia content authoring tool have to be provided for generating effective content in the formats like ppt, pdf, graphics, animation, Audio, video etc. Content management Solution has to be provided and integrated for effective searching and retrieval of the training content available in the learning management system.

4.9   Linking of e-LMS with PRASARNET.

PRASARNET is an intranet of Prasar Bharati and it contains various internal information for consumption/ information of its employees. As NABM caters training mostly to employees of Prasar Bharati, the eLMS is to be linked to Prasarnet suitably so that they can participate in training programmes. accessed by employees of Prasar Bharati. In this regard, Firm is to develop necessary API(Application Programming Interface). These APIs are in a form of object related to training data and Circulars to be uploaded on Prasarnet. HRIS / Prasarnet data on training will also be updated simultaneously after proper authentication and submission by NABM end through the software developed by vender. Prasarnet database has details like SMS and email of employees, developed software may use this information. Prasar Bharati will share the relevant APIs details for uploading and retrieval of records.

4.10   Updating/ Modification of Prasar Bharati website pertaining to NABM:

Prasarbharati.gov.in (http://prasarbharati.gov.in/) is the corporate website of Prasar Bharati. NABM portal is a part of it. The portal may be suitably modified/ updated to incorporate relevant information/links from eLMS for public

consumption or use. Necessary updates / changes in PB website for NABM in this regard will be carried out by the vender in consultation with IT Division during the warranty period.

4.11 Hosting of the services/software applications in CLOUD

The complete online solution including the customised learning management, eLearning system and other associated tools shall be hosted in a managed cloud platform hired by Prasar Bharati. The software has to be optimised for 500 concurrent access to the portal and other applications. The hardware and software platforms shall be optimally designed for quick accessibility. The cloud hosting shall conform to following specifications:

i)   Database Server (Shared) : 8 virtual core / 32 GB RAM (1:2 physical : virtual core) with streaming replication on similar server.

ii)   Application / Webserver (Shared) : 16 virtual core / 32 GB RAM (1:2 physical : virtual core).

iii)   Cent OS along with mariaDB for Database will be provided. If any additional open source software is required that will be installed on demand.

iv)   However, if any additional licensed software such as Windows Server OS, Microsoft SQL Server etc. is required, the perpetual license for the same is to be provided by the firm for installation in the cloud on the basis of BYOL (Bring Your Own License).

v) All licenses provided for the system, OS and application software should be perpetual and in the name of "Prasar Bharati."

vi) System Software and Middleware:

The solution shall be hosted in the robust and reliable software platform. The layers has to conform to the modern IT industry standards. The specification and standards of the technology used in the system software, middleware, and applications shall be clearly specified in the concept paper. The technical details for the software platform and applications shall be provided by the vendor regarding System Software, middleware, Platforms and frameworks & Database applications and their technology etc.

vii) The software/codes has to be secured enough to withstand to any malicious network attacks. The firm is to provide complete code and the associated

software to Prasar Bharati for hosting their application in cloud. The firm will also assist in configuration and resolving hosting related issues.

viii) The supplier shall provide a management interface of the system to NABM so as to enable to the admin users to change important configurations their own and to access the important logs and reports from the cloud hosted system.

4.12 Supply, testing and commissioning of 5 sets of 75" or higher Interactive Display System with OS- Android & Windows, and Digital Camera(PTZ), webcam including microphone, stand, etc. . (NABM Delhi- 2 sets, NABM Bhubaneswar - 2 sets and RABM Shillong - 1 set)(specification as per attached annexure-A & B).

4.13 Demonstration

The tenderer shall be required to demonstrate the functioning of the software solution tendered. This will be part of the technical evaluation. Non-compliance of demonstration shall disqualify the tender. The following items shall be demonstrated as per date and time to be published and communicated in due course: For demonstration hosting of e-LMS software will arrange by vendor in consultation with department (Zonal Office/NABM).

i. Proof of Concepts (POC) presentation of Applications with all functional modules of the offered solution under eLMS system as per technical specifications.

ii. Live application demonstration using customer authentication and users.

4.14 Incomplete offers shall be liable to rejection.

4.15 Tendering authority reserves the right to accept or reject any or all tender(s) without assigning any reason whatsoever.

4.16 Delivery Period: Five (5) months from the date of placement of purchase order for all the items/deliverables of eLMS software and Hardware. A stage-wise breakup of progress of deliverable/items may be given by vendor.

4.17 Deliverables:

i. System Requirement Specifications (SRS) - SRS Document shall be prepared by the successful bidder in close consultation with NABM within a period of Two (2) Months after placement of order. The details of features, functionality and workflow shall be worked out for all the software modules of the solution offered. The document has to be approved by NABM in consultation with IT division and zonal office, Prasar Bharati before implementation.

ii. Cloud hosted Learning Management System as per SRS for managing all offline as well as online and off-line training programs conducted by the academy (NABM).

iii. Cloud hosted eLearning System for conduction of online training programs.

iv. Cloud hosted Tools for preparing e-Courses/ Study Materials and the users.

v. Android/iOS Mobile Applications on Google Play Store and Apple Store.

vi. Comprehensive Documentation on complete functionality — hard & soft copies.

vii. Application Module installers used in the solution in CDs/DVDs or as downloadable link.

viii. License for all the software tools/applications, and the system software should be in the name of NABM, Prasar Bharati.

ix. User training for system administrators and tutors/trainers/staff at NABM Delhi and Bhubaneswar at NABM, Delhi for 5 working days (40 Hrs).

x. 75" inch or higher Interactive Display System with OS- Android & Window10 or above, and High resolution Cameras, accessories, stand, etc. - 5 sets. (Specifications are as per attached **Annexure-A & B**).

xi. The complete handover of the design, documentation, Architecture, APIs and code of both the mobile applications shall be provided by the vendor to NABM.

4.18 Documentation:

Minimum 3 sets of the following documents for the quoted solution shall be provided by successful bidder:

a. Application user and installation manual including system administration.

b. User manual along with Test Data Sheet.

4.19 TRAINING:

The successful bidder shall provide basic training of operation and maintenance of the system to the persons (12 of Delhi, 10 of Bhubaneswar, 3 of Shillong) to be nominated by NABM for 5 working days(40 Hrs) at NABM, Delhi.

4.20 Warranty: 5 Years with extension of 2 years

The successful bidder shall have to provide comprehensive warranty for five (5) years with extension of 2 years(on annual charges basis a per same terms and conditions of warranty period) for the offered cloud based e-LMS software solution - learning management, eLearning and associated tools along with the data. During the warranty period, the supplier will ensure for following:

i. The supplier will intimate the name, e-mail address and telephone no of technical expert to get rectified the fault in the system.

ii. The supplier will ensure the rectification of the fault/problem in the software or in the hosting platform within 24 hours after reporting of the problem by allocating adequate technical/human resources.

iii. The supplier will ensure that shutdown period of software will not extend for more than a day at a time in any case and such incident will not be more than thrice in a year. Otherwise, the cost of non-conformance shall be borne by the vendor as per the tender-penalty clause.

iv. The supplier shall ensure that customization and configuration issues, if occurred/required in the system must be taken up with utmost priority.

v. The supplier shall ensure the fixing of bugs in the hosted cloud based solution. The supplier shall also extend the software upgrades released during the warrantee period free of cost on time.

vi. The supplier shall ensure the fixing of bugs & provide upgrades in the Mobile Applications in the iOS and Android platforms free of cost during the warrantee period on time.

vii. The supplier may take up any major changes like addition of new features/system/ services in the portal/ mobile applications as per the rates of the technical manpower quoted as per the tender clause.

viii. The supplier/agency will ensure that the data available in the online system has to be backed up on automated data backup system at space provided by the cloud of Prasar Bharati(PB) in consultation of PB-IT Division.

ix. The supplier shall submit following performance and usage reports to NABM within 7 days after completion of subject month during the Warrantee period:

    a) Monthly Uptime Summary/ Status Report

    b) Monthly SLA Attainment Report

    c) Monthly Incident & Problem Management Report

    d) Monthly database Backup/ Recovery Report

4.21 Acceptance test

i. All the modules of the hosted solution must be installed, configured, customized and fully operational as specified in the tender.

ii. The bidder shall demonstrate all the features/facilities mentioned in the bid.

iii. Training part of the project shall be completed as specified in the tender.

4.22 Standards

The product of the supplier/agency shall comply the international standards like HTML5/CSS3/CMMI Level 3 /ISO Standards or the latest/better standards.
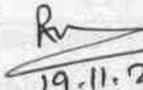
19.11.2020

राम बचन राम/RAM BACHAN RAM
निदेशक (अभि०)/Director (Engg.)
राष्ट्रीय प्रसारण एवं मल्टीमीडिया अकादमी
National Academy of Broadcasting & Multimedia
रेडियो कालोनी/Radio Colony
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Technical Specifications for Interactive Display System & Accessories for e-LMS

Under e-learning facilities at NABM

Sl. No.	Parameter	Specifications
1.	**Interactive Display System 75" or higher**	**Quntity-5 sets**
	Active Screen Size	75"or higher with IPS panel technology (LED BACKLIT)
	Panel	4K UHD and above
	Resolution/Aspect Ratio	3840x2160 (16:9)
	Brightness (Typical)	450 nits(cd/m2)
	Contrast Ratio	1600:1
	Viewing Angle	178°(H)/178(V)
	Response Time	7ms or less
	Speaker Type	Built in Speaker (15W+15W) or more
	Input & Output	Front Side : HDMI IN x 1, USB for OPS x2, USB for touch x 1
		Rear Side : RS232 x 1, MIC IN x 1, SD IN x 1, USB 3.0 Media x 2, HDMI IN x 2, SPDIF OUT x1, AV INx1, AV OUTx1, Earphone x 1, VGA IN x 1, AUDIO IN x 1, VGA OUT x 1, HDMI Outx1, DP inx1, RJ45 LAN IN x 1, RJ45 OUT x1, YPBPR x 1
	Technology	IR
	Power Supply	100-240V AC, 50 Hz
	Operating Temperature	-20°C ~ 70°C
	Operating System(Android)	Android 7.0 or more (RAM-2GB+ ROM-32GB) & Compatible with Windows/MAC/ LINUX
	OPS PC Module	Type-OPS,Cpu-i5 or more, RAM-DDR4-4GB,512GB SSD or More, OS compatible-Linux/Windows with preloaded window10 Pro 64 bit perpetual licence
	OPS Ports	USB, LAN, Wi-Fi ,VGA, Audio in/out and Mic input
	Annotation Features	Draw, Choose, Pens, Annotate, Erase, Create Shades, Text, Edit, Different fonts, Move, Screen Shot, Picture, Video Playing, Editing Pictures, Floating Keyboard, Background Customization
	Simultaneous Touches	10 points Touch
	Accessories	AC power cable, Wall mount kit, Stand, Styler pen-2no., Pointer pen-1no., connecting cable-5m HDMI, 3.0 m USB Extension cable, 1.5 m USB Touch cable, Remote control, wi-fi key-Board with mouse, Software CD and User Manual and all licences for Installed Applications
	Additional Features	Anti-Glare, Screen Sharing, writing and Annotation software, Applications tools

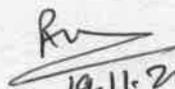| 2. | Digital camera(PTZ) -5 sets | Full-HD 1080p,1080i,720p video, USB host connection for WI-FI or 4G LTE Adapter, Optical zoom lens with 30x zoom ratio,12x digital zoom, Built in auto-focus and image stabilization,1/2.8-inch CMOS sensor, High sensitivity mode, Nightmode, PoE+equipped LAN cable, 3G-SDI and HDMI and IP digital outputs,2 channels audio (1-channel balance audio), RTMP/RTMPS streaming, Streaming with SMPTE 2022, Micro SDHC/SDXC memory card recording, Remote control via RS-232C/RS-422,or via IP controller ,upside down or Right-side up mountable compatible, etc. |
| 3. | Webcam-5 sets | USB-Full-HD(1920x1080p) with Built in microphone compatible for multi systems: Windows7, 8, 10, Mac OS and Android etc. Platform Compatibility: Zoom, Jio, Meet, Skype, Google-Meet, webex, Youtube, etc. |

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Bill of Materials of e-LMS for e-learning facilities at NABM Delhi

(Reference: Technical Specs. of e-LMS and the Annexure-A)

Sl. No.	Items	Technical Specifications(in brief)	Quantity (Nos./ sets)	Warrantee Period (years)	Remarks	Amount (Rs)
A)	Supply, Installation, Testing and Commissioning of cloud hosted e-LMS software solution and other items for online training e-learning management & delivery system at NABM Delhi.					
1	e-LMS Software As per 'A'	Supply, Installation, Testing and Commissioning of cloud hosted e-LMS Software solution for training management system & delivery system including the software licenses & training as per the technical specs. This will consist of the following modules etc. of e-LMS as per the tech. specs: i. Preparation of Annual Training calendar ii. Content management module for institutional learning environment iii. Training database module iv. E-learning module for on-line & offline training v. Feedback& its analysis module vi. Report generation, test/ assessment task & certificate generation module vii. Hostel booking module viii. Library management module ix. Linking module of e-LMS with PRASARNET x. Updation module of NABM information on Prasar Bharati website xi. Mobile app module for e-LMS complete solution as per the specs. xii. Module for departmental & other exams/tests	1	5	Extended 2 years	

		xiii. Registration module for trainees/authorised users xiv. Cloud hosting module. xv. Software licenses for all the modules of the e-LMS Software as above. Note: All Software licenses should be on perpetual basis.				
2.	Interactive Display System	75" or higher, 4K UHD and above, 3840x2160 (16:9), 450 nits(cd/m2), 1600:1, 178°(H)/178(V), 7ms or less, **Built in Speaker (15W+15W) or more, IR Technology**	5	3		
3.	Digital camera(PTZ)	Full-HD 1080p,1080i,720p video, USB HOST connection for WI-FI or 4G LTE Adapter, Optical zoom lens with 30x zoom ratio,12x digital zoom, Built in auto-focus and image stabilization, 1/2.8-inch CMOS sensor, High sensitivity mode, Night mode, PoE+ equipped LAN cable,3G-SDI and HDMI and IP digital outputs, pan, tilt, zoom etc.	5	3		
4.	Webcam	USB-Full-HD (1920x1080p) with Built in microphone compatible for multi systems: Windows7,8,10, Mac OS and Android etc. Platform Compatibility: Zoom, Jio Meet, Skype, Google-Meet, webex, Youtube, etc.	5	3		
5.	Training	As per specs	As per specs	-		
			Total amount			
			Taxes			
			Grand Total			

19.11.2020

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