

Annex 1 to the RfP15/01007 Provision of Services for the Elaboration of the eLearning System for Local Elected Officials from the Republic of Moldova

Technical Requirements

Contents:

A. Background	3
0.1 Purchaser	3
0.1.1 General Description of Purchaser	3
0.1.2 Project's General Objectives	4
0.1.3 Stakeholders.....	5
0.2 Purchaser's Business Objectives	6
0.3 Acronyms and Definitions	6
B. Functional and Performance Requirements	10
1.1 System Functionalities	10
1.1.1 System components and conceptual architecture	12
1.1.2 Informational objects	19
1.1.3 Users and their roles in the system.....	19
1.1.4 Informational systems to be integrated with the eLearning platform.....	21
1.2 Functional requirements to the IT system	22
C. Technical Specifications	28
2.1 General technical requirements	28
2.2 Specifications of the system's hardware components	31
D. Testing and Quality Requirements	32
3.1 Planned inspections	32
3.2 Pre-Acceptance Testing	32
D. Project implementation Requirements	34
4.1 Project Management	34
4.1.1 Methodology	34
4.1.2 Analysis and design.....	35
4.1.3 Development / configuration and internal testing	36
4.1.4 Implementation.....	36
4.1.5 Acceptance Tests	37
4.1.6 Production entry.....	37
4.1.7 Requirements regarding the users's trainings.....	37
E. Required Format of Technical Proposal	38
5.1 Description of Information Technologies, Materials, Other Goods, and Services	38
5.2 Item-by-Item Commentary on the Technical Requirements	38
5.3 Preliminary Project Plan	39
5.4 Confirmation of Responsibility for Integration and Interoperability of Information Technologies	39

A. BACKGROUND

0.1 Purchaser

The purchaser of the proposed software solution is United Nations Development Programme (UNDP) through its Joint Integrated Local Development Programme (JILDLP).

UNDP programme in Moldova is guided by the Country Programme Document, and the UN-Moldova Partnership Framework "Towards Unity in Action" for 2013-2017 and its action plan, which is in line with the priorities of the Government of Moldova.

0.1.1 General Description of Purchaser

The Government of Moldova explicitly acknowledges that decentralization represents an essential item on the reform agenda of the country. The goal is to provide quality services to women and men equitably - including the rights of persons from vulnerable groups - through building autonomous and democratic local governments, able to manage efficiently their responsibilities. Thus, on April 5, 2012 the Parliament of the Republic of Moldova adopted the National Decentralization Strategy that represents the main policy document in the field of local public administration and establishes the national mechanisms to ensure genuine local autonomy.

Prior to the approval of the Strategy, the Government has benefited from the support provided by the Joint Integrated Local Development Programme/JILDLP implemented by UNDP and UN Women and funded by the Government of Sweden and UNDP. Given the stringent need to further advance the implementation of the Decentralization Strategy, and building on the successful cooperation with the Joint Integrated Local Development Programme, the State Chancellery together with United Nations have designed a new Programme phase to support the implementation of the Decentralization Strategy at policy and local levels.

The Overall Objective of the Programme is to support better and equitable service provision and sustainable local development, facilitated by the improved legal and institutional framework resulting from the implementation of the National Decentralization Strategy.

The Immediate Objectives of the Programme are:

- To support the Government in improving the policy and legal framework as mandated by the National Decentralization Strategy to ensure local autonomy, availability of resources, and more effective local management for better and equitable service provision.
- To improve the capacity of Local Public Authorities/LPAs to deliver efficient, equitable and accessible local public services, to facilitate sustainable development and foster social inclusion.

The interventions at the local level will aim at developing models of operational local governments - 'champions of change' - by providing support to implement changes in the operation and structure of local governments in line with the changes brought by the Decentralization strategy. JILDIP will assist LPAs in improving their capacity and operations, will support target communities and their local authorities to provide quality public services to achieve sustainable economic and social development, in the main areas affected by the Decentralization strategy.

0.1.2 Project's General Objectives

In a rapidly changing global environment, the work of UNDP and the broader UN family aligns with the new national development vision, Moldova 2020, and sector strategies.

On the other hand, the system aims to support the strategic goals of the Local Decentralization Reform in a comprehensive, programmatic and innovating manner. It will support this sector's long-term priorities, which will pave the way for the future requirements and future integration of public services.

Based on the modern education and training principles, LPA's eLearning system should become a complete integrated platform for training and content management that can be formatted as the Academy of Public Administration requirements and took the form defined by it.

The major objectives to be achieved are to:

- reduce the actual time for training of the new elected local officials;
- automate the training process;
- reduce the actual costs regarding the training of the new elected local officials;
- organize information in a clear and uniform manner;
- manage tasks and monitor their fulfillment;
- ensure quick and guaranteed access to the knowledge and information regarding the local public administration;
- ensure a lower environmental impact

The LPA's eLearning system is planned to be a modern training, management and monitoring tool for the entire training process within Local Public Authority of the first level, but with the possibility to be replicated also for the second level.

The proposed solution is a Computer Assisted Learning – CAL one, and it should be used for distance / non-assisted learning (Computer Based Learning). The system should be fully compliant with the SCORM and IMS QTI standards.

0.1.3 Stakeholders

UNDP/JILD – The purchaser of the system

Local Public Authorities – the beneficiary and end user of the proposed information system.

The Academy of Public Administration – will take the ownership of the proposed solution. One of the major concerns of the Academy is the quality of training, both of Master and doctoral degrees, and of civil servants delegated by central and local government bodies. The integration of informational technology in each academic discipline is a constant concern, the administration of the Academy following to modernize the teaching process. Alongside with teaching, the research activity is promoted and supported. Thus, each specialty has a scientific research and publishing plan, participates in national and international conferences or symposia. The Academy is involved in the elaboration of various documents and the perfection of the legal framework for the public service, the status and ethics of the civil servants. In the process of implementation of the complex reforms in public administration, the teaching and managerial staff of the Academy develops draft laws, concepts and national strategies.

Special Telecommunication Center (STC) - the technical administrator.

e-Government Center (<http://egov.md>) is a public entity established by the Government of Moldova in August 2010. The purpose of the e-Government Center is to promote and support the development of the technological modernization of the public sector as part of the efforts to implement the e-Transformation agenda. One of its major goals is to provide support to the public sector in relation to the use of ICT, thus contributing to a more efficient, transparent and connected Government.

The implementation of the e-Transformation agenda aims at:

- designing and implementing IT systems to support the public sector reform processes;
- developing ICT infrastructure in the public sector;
- ensuring transparent and improved performance of the central public administration authorities;
- building the ICT skills of the public sector employees;
- developing the e-governance legal framework.

The e-Government Center will coordinate all the project activities.

0.2 Purchaser’s Business Objectives

The project also aims the following objectives:

- Reduce travel time and travel costs for off-campus learners
- Ensure all LPA’s staff with learning materials and continuity of knowledge
- Facilitate the evaluation and monitoring process
- Ensure the transparency at the local level
- Promote a new modern approach in the public servants area

0.3 Acronyms and Definitions

Table 0.3.1 Abbreviations and acronyms used in Terms of Reference

	Acronym	Description
1	APA	Academy of Public Administration
2	DOC	Microsoft Word file format
3	EGC	Electronic Government Center
4	JILD	Joint Integrated Local Development Programme
5	IM	Instant Message
6	IMS QTI	IMS Question and Test Interoperability
7	IDNO	(Organization’s Identification Number) – identification number of legal entities.
8	IDNP	(Personal Identification Number) – short form of the identification number of a person used in the international practice.
9	PDF	Portable Document Format
10	LAN	Local Area Network
11	LPA	Local Public Authority

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

	Acronym	Description
12	MSign	MSign is a program that allows for digital signing of documents and verification of digitally signed documents. Moreover, MoldSign can use the SAM authentication module (Secure Application Module) – a secure access module, for document signing.
13	MPass	M-Pass is a national service of authentication and access to electronic public services. It provides several login mechanisms – mobile signature, digital certificate, username and password.
14	PPT	Microsoft PowerPoint presentation format
16	SCORM	Sharable Content Object Reference Model
17	SRP	State Register of Population
18	SRLE	State Register of Legal Entities
19	SA AIS	Social Assistance Automated Information System
20	XLS	Microsoft Excel file format
21	UNDP	United Nations Development Programme
22	ICT	Information and Communications Technology

Table 0.3.2 Largely used business definitions and terms

	Term	Definition
1	System Actor	Actors are the modeled system users. Every actor has a well defined role and may perform specific operations. An individual may act for one or several system actors, but will have just one role in every use case.
2	Data Bank	Technical informational system that includes one or several databases and their administration system.
3	Use Cases	Sequence of steps taken by the system user roles, defining to a certain extent the interaction between them.
4	Concept	A document describing the philosophy of the automated informational system as a set of interconnected visions on the system operation.

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

5	Activity Diagram	Graphical representation of workflows of stepwise activities and actions.
6	Flow Chart	Graphical representation of the steps taken to get an output. The flowchart allows seeing the logic or lack of logic in the sequence of events.
7	Process Chart	Representation of any type of phased processes. As a rule, it looks like a logical scheme with shapes that represent process steps, connected by arrows that point to the next step.
8	Use Case Diagram	A use case diagram is a set of use cases and actors. It: <ul style="list-style-type: none"> • makes a general description of the way the system will be used; • makes an overview of the expected system features; • shows the interaction between the system and one or several actors; • makes the system produce the expected outputs.
9	Entity	Phenomena, processes, material or abstract things – nouns from the description of an activity. Examples of entities are Persons, Outputs, Beneficiaries, and Documents.
10	Business Entity	Person, Institution, System, Document involved in a specific activity (activities are part of processes, and processes are part of flows). While business entities are the entities involved in a specific activity area, application entities are the business entities that will be computerized in the Informational System.
11	Nomenclature	List of unique values of informational business entities in the system.

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Table 0.3.3 Technical definitions and terms largely used in this document

	Term	Definition
1	Architecture	All the essential solutions related to the organization of the software system and the set of structural interfaces and elements and the cooperation defined by these elements.
2	Database	A collection of data organized according to specific rules that include general principles for data description, storage and processing.
3	Web Browser	A software application that allows visiting websites, opening a webpage to process, view or surf from one page to another.
4	Function	A set of actions in a process that deliver a useful output for a specific actor in a flow.
5	Object Identifier	Data attribute to name an informational object;
6	Internet	A global public network of interconnected computers that provides access to its information resources. Internet can be described as a network of local networks connected by routers.
7	Intranet (LAN)	Internal network that uses the Internet standards and principles with limited access.
8	Object	The virtual version of real both material and non-material entities that refers to state and behavior.
9	Web Portal	A set of software applications, including the technologies for integration and display of information received from different sources in the network. The web portal is made of search engines configured after consultation with users, changes performed in the mechanisms developed from flexible portlets of the modular structure and dynamic content.
10	Process	An exact sequence of events realized by a group of logically linked activities that use the organizational resources to get the best results towards organizational objectives.
11	Role	Specific behavior and obligations of an individual or several individuals that work in a team (working group).

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

	Term	Definition
12	Scenario	Presentation of knowledge with the help of an exact sequence of events to determine the outputs of the interaction between the known elements.
13	Automated Informational System (AIS)	All the hardware and software resources used to process information and handle information resources and user infrastructure;
14	National Automated Information Systems	Automated Information Systems that operate in the state and public administration institutions. An integrated combination of all the telecommunications infrastructure, information resources, legal provisions, organizational structures and user infrastructure used to fulfill the specific tasks by a user;
15	Software application	All the programs and information processing systems and the program documents required for the operation of such programs.
16	Sharable Content Object Reference Model (SCORM)	A collection of standards and specifications for web-based electronic educational technology (also called e-learning). It defines communications between client side content and a host system (called "the run-time environment"), which is commonly supported by a learning management system

B. FUNCTIONAL AND PERFORMANCE REQUIREMENTS

1.1 System Functionalities

The LPA's eLearning system should offer a friendly graphical user interface (GUI), easy to use built on a modular structure, which facilitates maintenance. The technology used in developing of the eLearning platform should assure the portability, it should be operated perfectly on all popular operating systems. Access to the application should be performed easily via the local network or over the Internet through a Web browser.

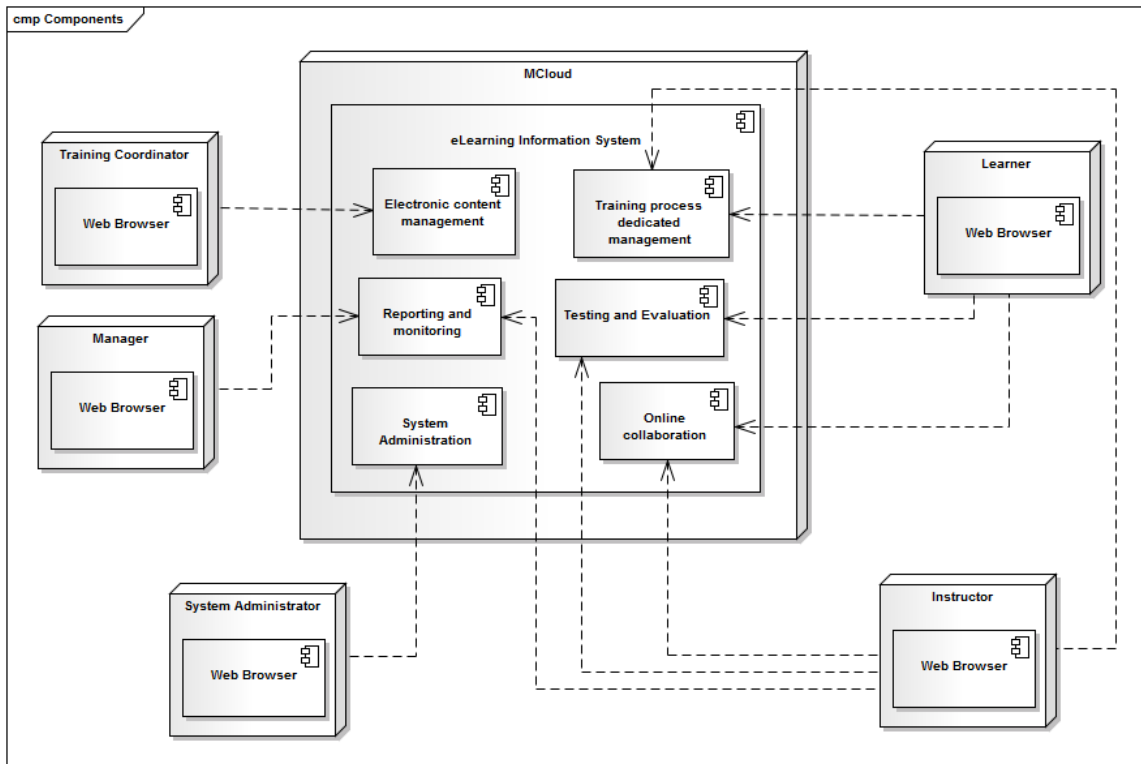
The system should be built as a flexible model both in terms of organization and in terms of manageable training materials, (there should be the possibility to be organized interactive sessions with multimedia facilities and in presentations that could integrate most types of MS Office documents, movies and other interactive materials - animation).

The proposed solution should provide adequate support in decision-makers accountable, control, planning, forecasting, tracking and forecasting training activity areas.

The system is optimized for:

- **Synchronous Training** - online tutoring type training, the instructor controls the whole process of creating, managing, adjusting and monitoring the training environment;
- **Asynchronous Training** - "remote" training that allows the LPA's staff's personal pace study, collaborative projects;
- **Manage educational content** – the system will provide an electronic library, a real knowledge base designed to store and organize large amounts of information and training materials, adaptable and configurable; Library will provide users (even those uninitiated) functions such as:
 - controlled access to training materials;
 - systematic consultation or searching large volumes of text and multimedia content;
 - import and export training content in popular formats such as MS PowerPoint files, MS Word, HTML, PDF, RTF or images and movies;
- **Testing and Evaluation** - allow measurement of the impact and effectiveness of training programs to continuously improve learner performance. The proposed system should support electronic testing and evaluation facilities: automatically create tests using predefined templates and various options, editor tests and the possibility of creating a comprehensive database of questions and random generation in test.
- **Managing and monitoring the whole training process** - management and monitoring information on courses, instructors, students, organizational structure, statistics, facilitating optimal internal organizational resources allocation in training organization; The system also should enable management and monitoring information on courses, instructors, students, organizational structure, statistics, facilitating optimal training internal organizational resources allocation. In addition, the proposed platform should allow the defining of the different types of users, grouped by access privileges: course participants, instructors, training coordinators, managers, system administrators.
- **Communication and collaboration** - various tools that will ensure the needs of communication and collaboration between eLearning system users.

1.1.1 System components and conceptual architecture



Picture 1 Component diagram

According to the above diagram, the proposed solution should integrate several major components such as:

- Electronic content management component
- Training process dedicated management component
- Reporting and monitoring component
- Testing and Evaluation component
- Online collaboration component
- Administration component

The above-mentioned components will integrate the relevant functionalities.

1.1.1.1 Electronic content management component

The system should provide an electronic content management component; a real knowledge base designed to store and organize large amounts of information and training materials, adaptable, configurable and index.

The system should allow organizing information from the database within predefined hierarchy, but easily configurable by the administrator.

Depending on the access rights, users should be able to change the information structure by adding, modifying or deleting directories, educational materials and tests.

The component should provide users with features such as:

- controlled access to training materials;
- systematic consultation or searching large volumes of text and multimedia content;
- creating educational content through embedded editor (using any resources: documents, multimedia, links, etc.) tests and questions editors, editors glossaries / dictionaries;
- import and export of archives containing educational materials;

Between server and educational material exchange should appear the following data flows:

- Data related to user profile
- Data defining attributes of educational resources;
- Data about the interaction between the user and educational material;
- Data about organizing, airworthiness, aggregation and reuse of educational material.

In turn, educational materials must comply with the standard specification, and this is reflected in the following:

- Attributes for defining educational materials such as author, description, duration, etc. are described in a standardized XML file;
- The navigation structure and aggregation is defined in an XML file that complies with this standard;
- Optionally can contain a library of functions that can communicate with the server.

1.1.1.2 Training process dedicated management component

Synchronous training

Within the eLearning system, the instructor should have the ability to create virtual classrooms where he can control the training process. These virtual classes are specific for synchronous education.

The instructor should be able in a virtual classroom sessions to control transfer teaching content to learners. The instructor should have the option to preview the educational content associated with a

synchronous process type through specific option before sending it to the learners, and after being sent.

In addition, in the synchronous training type session, the instructor should be able to select each learner that will receive or not a lesson moment sent with select / deselect option. In this way, the instructor should have the possibility to control learner activities, their duration and can only send certain materials that keep learner interest.

Furthermore, the instructor should have the option of allowing the student to leave or not the synchronous session.

Asynchronous training

Within the eLearning system the instructor user can create virtual courses to publish educational content packages or benchmark tests. Teaching flows are defined individually for each course.

When creating a course it can be set its start date and end date, or the user can opt for permanent validity of the course.

The system should allow grouping of courses into categories and subcategories of courses.

Inclusion of learners in the course can be made directly by the trainer or instructor may choose a period of time when learners can be self-register.

Within the courses it be possible to be added study sessions, each session having its own period defined.

Within the courses, it should be possible to be added self-study exercises. Each exercise may comprise one or more topics that students will need to upload to the course and will be graded by the instructor.

1.1.1.3 Reporting and monitoring component

The proposed eLearning system should provide a large variety number of usage system statistics to monitor system usage and charging. There are available statistics of courses, educational materials, tests, questions, teachers, students, organizational structure, statistics, facilitating optimal allocation of internal resources in training process.

The system should be compliant with SCORM 2004 reporting specifications.

The system should audit user actions such as connecting / disconnecting, creating courses, attending lectures plus other actions with sensing.

The system should allow the system administrator to view user actions and the date and time, these were made.

1.1.1.4 Testing and Evaluation component

The system should provide support and assistance for evaluation, providing users with a specialized editor for tests building.

The proposed eLearning system should enable the following operations for a test:

- test creation;
- test editing (changing information or content test);
- test deleting.

The test editor dedicated for test creation should allow the users to create the following types of questions:

- questions with a single correct answer;
- multiple correct answers questions;
- open response questions;
- with the associations of elements;
- ordering of elements;
- filling in the blanks.

Tests created can be used both for assessment courses and for self-evaluation (in electronic content management module).

The instructor may add as many questions in a test.

Marking in the test should be possible to be performed automatically by the system or manually by the instructor scoring algorithm is being configurable.

All testing sessions' information should be recorded in the system. In this way it should be possible to generate statistics for tests supported by the learners. Generated statistics should include information about: learners who have passed the test, the number of claims, time support, actual working time, details of the results.

The learners should be able to view their results obtained from test completion. The system should allow direct recording of test results at the end, or adding their subsequent modification by the instructor.

The proposed eLearning platform should automatically allocate response time for each question in the test. The system also should automatically allocate response time for the entire test. The instructor may choose a time within the test will be available for learners.

Tests can be sent to students with randomly changed the order of these questions and having the random order changed of the responses from a question.

The system should enable collections of questions creation and test generation using these collections of questions. In addition, the platform should allow the verification of a sufficient number of questions that meet the chosen criteria for generating tests from collections of questions. In this way, it should allow the trainer to check and make sure before automatically generate tests that are sufficient questions that meet certain criteria.

The instructor should be able to choose the number of times a learner can support test and its results are kept for all its attempts. Learners' test results can be exported in xls or csv formats.

The system should allow adding metadata to created tests.

Tests and questions should be possible to be exported and imported from some external files. The system also should implement international standard IMS QTI. By implementing standard specifications the solution, achieve interoperability with any test developed according to these specifications.

1.1.1.5 Online collaboration component

Audio-video conferencing

Online collaboration subsystem should contain an audio-video conferencing module to facilitate learners' communication in dispersed areas, "face to face" with their instructor.

With the audio streaming module, the instructor and the LPA's learners should be able to communicate as if they were in the same room. Streaming video module should allow transmission of images both from instructor to all its learners and between learners, according to parameters established for each session separately.

The system should provide to the instructor the opportunity to moderate a collaborative session.

Chat – messaging

Within the system should be available the possibility of transmitting instant messages ("IM") both in plenary (session associated with the group) as well as private direct users.

Share documents

Users in a collaboration session should be able to use a tool in order to share documents and images in the form of slides. Such slides will be distributed to other participants in the session via a player. The system should support shared documents (. Doc, Xls,. Pdf,. Ppt,. Jpg,. Gif,. Etc.). This functionality should allow joint view these types of files but not edit them.

Dashboard

During the collaborative sessions, it should be possible to use the tool called “dashboard”. The system will allow schemes, drawings or complex diagrams during an online presentation with this tool. Users should have access to a rich palette of drawing objects needed.

Share applications

The instructor should have the opportunity to lead a training session by showing learners how to work in a software application running on his computer with a way of "desktop sharing". The system will allow the sharing of entire desktop or just part of it.

Collaborative session

During a collaborative session, participants will be able to access the same web resources and to navigate on websites together.

1.1.1.6 Administration component

The system should provide a controlled environment for activities in the system. Connection to the system should be secured by username and unique password, each user having a defined system account and password.

The system should implement the latest security techniques. The security of the platform must be based on the functions and roles (which are collections of functions). Roles defined in the system should allow access to sets of features. Different roles could be defined for different sets of features. Roles should be associated to users. User rights are aggregated through aggregation of roles. The number of users is not limited by the role.

In addition, for every role created it should be possible to copy the permissions of another role or roles to create child type roles. For each role should be assigned a set of permissions through which associated users with this role can have different rights platform.

The system should offer a range of management facilities including:

- organizational structure of the institution management;
- logistics information management necessary to conduct courses;
- customized and automatic notification subsystem;
- support for evaluation and monitoring the system usage and efficiency;
- variety of reports and statistics in real time;
- the system should store information about the date, location and time each user connection allowing monitoring using log files.
- the system should integrate and synchronize with the LDAP service to retrieve data on users and on the structure of the organization.
- the system should allow using the PKI certificate authentication integrating with a certificate authority server.

The system should allow communication among its users through the following modules:

- dedicated forums where users can discuss and exchange messages. Users can create topics related to a particular course or a particular activity. Posts in forums can be created, deleted, searched or pages for ease of use. Forum is complemented by a strong management module which allows: granting access rights (read, create, moderation, administration), moderating forums, applying filters on the forums.
- internal mail within the system where users can exchange messages

System calendar

The proposed eLearning platform should integrate a calendar system in which users can track user's progress of events in the system.

The calendar should automatically be updated with new events that are created within the system.

The calendar can be used by users also as a personal calendar that can be entered events of personal interest.

Helpdesk system

The system should provide an integrated help module available in any application area. Depending on the operation that is running or in which menu the user is at the touch of the button Help the

user will get a screen contains helpful explanatory text for operation in progress or the screen interface of which the help system was called.

The Service Provider should prepare the user manual. Textbooks should be written mandatory in Romanian.

1.1.2 Informational objects

The informational objects are all the System's objects, their attributes and scenarios according to which specific events happen in relation to them.

All the informational objects treated in the system should have the following peculiarities:

- unicity (availability of a unique identifier that identifies and differentiates an object from other similar objects);
- state (the object state is defined by a set of attributes that describe the object's variable properties considered in the system);
- behavior (the object's behavior is defined by the sequence of events that happen and that are considered by the system),
- origin (own object is the object originally considered and identified in the system; borrowed object is the object taken together with its identifier from another system).

1.1.3 Users and their roles in the system

The actors are the modeled system users. Every actor has a well defined role that enables it to perform specific actions.

An individual may have the role of one or several actors in the system, but only one role in every *use case*.

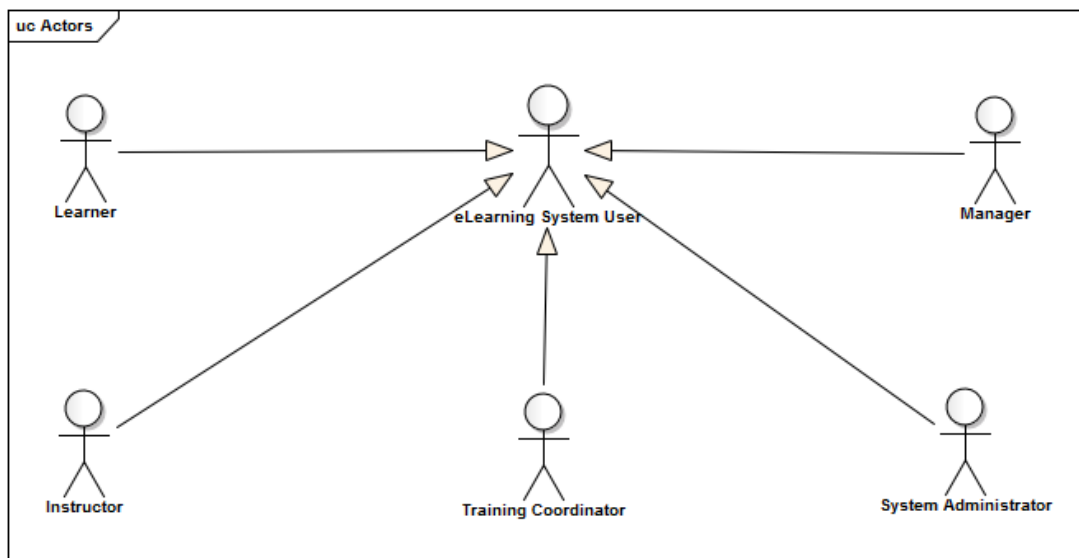
An actor role may be also represented by a non-human system, such as a software application.

Actor	Description
Learner	The user-participant at the training course, represented by the Local Public Authority servant. The user could follow the training/course, participate at the evaluation exam, in the forum discussion and send/receive IM.

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

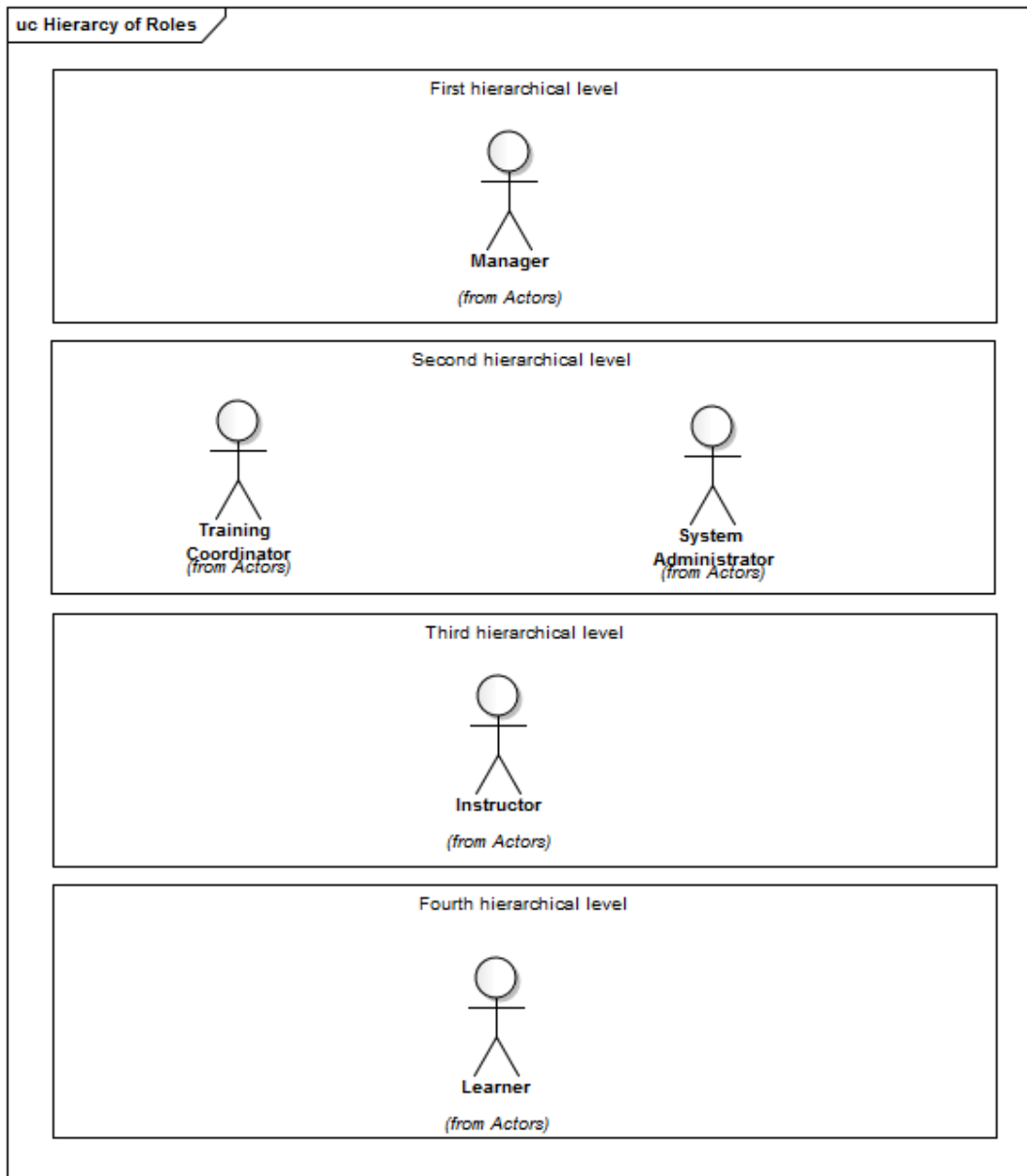
Actor	Description
Instructor	The user of the system normally responsible for the teaching process of the learners.
Training coordinator	The user responsible for: <ul style="list-style-type: none"> • Researching and acquiring training content and activities for team members • Creating workbooks and other decision support materials • Designing and creating training methodology • Identifying, acquiring and maintaining external training and educational content • Maintain and update the training content
Manager	The manager could be represented by a key-person from the APA. The user does not participate in the training process, but could access reports regarding the performance of the learners and instructors.
System administrator	The system Administrator is represented by a technical person responsible for the maintenance, support and configuration of the system.

System Actors are displayed in the following diagram:



Picture 2 System Actors

Hierarchy of System Roles is shown in the following use case:



Picture 3 Hierarchy of System Roles

1.1.4 Informational systems to be integrated with the eLearning platform

At the moment, there are no other external information systems or resources that should be connected to the LPA's eLearning system.

Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova

1.2 Functional requirements to the IT system

Identifier	Status	Description
FRQ001	M	The System Administrator will be able to edit/adjust the content.
FRQ002	M	The System Administrator will be able to configure the learning content.
FRQ003	M	The menu of the system will be personalized according to the role and user access rights
FRQ004	M	The system will enable learner to fill in the electronic forms online.
FRQ005	M	The electronic form will be submitted for review unless all its mandatory fields are filled in.
FRQ006	M	The system shall generate a unique identification number for every new user added in the system
FRQ007	M	The system should provide users import and export mechanisms for material in a predetermined format, SCORM compliant.
FRQ008	M	Educational content import operations should be planned by specifying the date and time of execution. This feature should increase system usage performance and implies lower response times to user requests by scheduling imports during periods of low traffic.
FRQ009	M	The system should allow synchronous and asynchronous training session types.

Data entering

Identifier	Status	Description of functional requirement
FRQ010	M	The system shall have a graphical interface for data entering. The registration form shall be implemented.
FRQ011	M	The system shall have a validation mechanism for the form's mandatory fields.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description of functional requirement
FRQ012	M	The system shall generate a unique identification number for every processed file.
FRQ013	M	The system shall generate a unique identification number for each record saved by the user.
FRQ014	M	The system shall allow printing out the forms once filled in.

Data editing

Identifier	Status	Description of functional requirement
FRQ015	M	Data will be edited by accessing the dedicated electronic form.
FRQ016	M	The system will display the editing form filled in with the data already recorded in the system.
FRQ017	M	The system will have a field validation mechanism similar to registration.
FRQ018	M	The system shall save the date and time of edits and the user who made edits.

Other general requirements

Identifier	Status	Description of functional requirement
FRQ019	M	The solution should implement educational materials SCORM 2004 fully communication. This should be done by a specialized component included in the system interface responsible for running SCORM material.
FRQ020	M	Depending on the access rights, users should be able to change the information structure by adding, modifying or deleting directories, educational materials and tests.
FRQ021	M	The system should allow resource loading either individual files (in any format: Microsoft Word, PowerPoint, Excel, Adobe PDF, images in any format, sounds and animations, movies and web pages, etc.) or even whole directories or in packet in a ZIP archive.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description of functional requirement
FRQ022	M	Following multiple file upload resources structure will replicate the file structure on the disk at the time of loading.
FRQ023	M	All resources should be available for download by users, as long as those users have this right.
FRQ024	M	The proposed solution should include an editor with which the user can create educational content packages from loaded resources on system.
FRQ025	M	The solutions should allow adding metadata (title, author, keywords, etc.) to educational materials
FRQ026	M	The system should allow searching by keywords or attributes associated with objects created.
FRQ027	M	Introduction of educational materials in the repository should be performed by adding files or whole directories or by importing ZIP archives.
FRQ028	M	A package of educational content should be easily filled with new components.
FRQ029	M	Users should have the possibility to share folders and files with read or edit access rights.
FRQ030	M	The proposed eLearning solution should allow defining advanced documents approval flow.
FRQ031	M	Within these, document creator should have the possibility to add users to validate working papers and can make changes in them.
FRQ032	M	Changes should be saved by the system as successive versions of the original document, which can be viewed later.
FRQ033	M	All existing application reports should be possible to be filtered using predefined filters or changing the default filters.
FRQ034	M	All existing reports should allow ascending or descending ordering information for each column. Ordering should be performed easy with a simple click on the column name.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description of functional requirement
FRQ035	M	All existing reports application allows hiding or showing columns in a report.

Requirements regarding the training processes in the system

Identifier	Status	Description of functional requirement
FRQ040	M	The instructor user should be able to create virtual classes with distinct educational materials based on each learner profile, reducing preparation time rate for each user.
FRQ041	M	The instructor should have the possibility to control the learner level of interaction with the system.
FRQ042	M	In the virtual class, the instructor should have the possibility to manage and monitor in real time the process of completing tests by learners.
FRQ043	M	The visit history „Access/Change Logs” can be viewed in the electronic file: last data editing (date and time) per every file section and the user who made edits.
FRQ044	M	Data editing shall be possible only by the user with the appropriate authorization level.
FRQ045	M	The proposed eLearning system should allow the instructor user to access during a statistical test in real time through which can view the time spent by each learner, the number of questions completed, and the number of correct responses made during the test.
FRQ046	M	The instructor should be able to dictate anytime to stop the test and record the result.
FRQ047	M	Virtual classroom sessions should allow instructors to adapt the progress of the course with the rhythm and progress of each learner or each group of students.
FRQ048	M	Courses may have prerequisites set consisting in other courses or tests.
FRQ049	M	The system should allow learner to add personal notes.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description of functional requirement
FRQ050	M	The system should allow adding metadata (title, author, keywords, etc.) for training and educational materials therein.
FRQ051	M	In the proposed system should be available an automatic email alert mode through which users receive notifications about changes within the courses.
FRQ052	M	The system should allow detailed statistics on students' progress in courses and the results of them.
FRQ053	M	The system should allow adding polls within courses, it containing a comprehensive analysis of the results.
FRQ054	M	There can be possible generated certificates of completion of courses and print them directly from the system.
FRQ055	M	The system should provide users import and export mechanisms for material in a predetermined format, SCORM compliant. It should be possible to import whole directories of files. This educational content could be possible to be played using integrated SCORM player.
FRQ056	M	The system should allow sequential covering materials, guided by the system as defined strategy to create and implement course navigation features SCORM 2004 3rd Edition.

Requirements regarding the search mechanism

Identifier	Status	Description of functional requirement
FRQ057	M	The system shall have a flexible module that will enable retrieving documents and performing searches by various criteria;
FRQ058	M	Search system allows users to choose the type of object and the platform area in which the search is realized.
FRQ059	M	Search results will be presented in order of relevance results with the most relevant results first.
FRQ060	M	The solution should allow users to save search results offered educational contents and their subsequent consultation.

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description of functional requirement
FRQ061	M	The search results can be viewed as a list or in a shape of a tree; This allows users to reduce the required time in retrieving information sought targeted educational materials, information saved in search session.
FRQ062	M	The search engine shall provide information logically linked to the search request.
FRQ063	M	The proposed eLearning platform should allow access to educational content saved search results after disconnection / reconnection. In this way, it eliminates the time required for a new search, creating efficiency usage of solution.

Event logging

Identifier	Status	Description of functional requirement
FRQ064	M	The system will designate the events to be logged.
FRQ065	M	The logging mechanism could be the integrated logging subsystem from <i>M-Cloud</i> . The logging subsystem will record the business-related events. The other events shall be logged in a local log.
FRQ066	M	The system shall allow for viewing the history of the operations performed by users - date, time, and user.

User administration

Identifier	Status	Description of functional requirement
FRQ067	M	The login module will be based on username and password.
FRQ068	M	The system shall cover an implicit category of users created by developer, while its credentials shall be issued upon delivery for System Administrators.
FRQ069	M	The system allows adding, editing and deleting users via a very intuitive administration interface.

Other requirements

Identifier	Status	Description of functional requirement
FRQ070	M	Each user should be able to change the interface theme. Also, each user should have a personal workspace in which they can add and organize specific blocks for: calendar, notes, progress in class, chat or shortcuts to learning materials.
FRQ071	M	The system shall not allow for the suppression of a category of metadata if the latter is used at least in one database record.
FRQ072	M	The system should provide multiple facilities to access Web 2.0 resources (wikis, blogs, social networking, etc.) encouraging learning content sharing and creating authentic virtual communities.

C. TECHNICAL SPECIFICATIONS

2.1 General technical requirements

Identifier	Status	Description
NFRQ001	M	The system shall have security elements to secure the integrity of communication between components, data integrity and will allow for the implementation of adequate security policies.
NFRQ002	M	Data integrity and system functionalities shall be ensured by limiting the access of the individuals who may manipulate data or system components.
NFRQ003	M	Database integrity shall be ensured both by introducing constraints at database level and a data validation mechanism at entry. There will be logins for the central database to guarantee data recovery and high availability. Data recovery is required both in case of disasters and to prevent fraud.
NFRQ004	M	Login/Identification is precondition for any action to be performed by a user. The solution shall use an integrated login system that will enable the user to login first and then perform actions in the system. While logging in the

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Identifier	Status	Description
		user will also be identified – relevant information in the audit mechanisms.
NFRQ005	M	Access Control/ Authorization shall be performed during login when the user's authorization level will be determined, enabling the user to perform in the system (in any of its components) only the allowed actions and to work only with the appropriate data.
NFRQ006	M	Security audit shall be performed at the central application level by logging the actions performed by the connected users and the unsuccessful logins as well.
NFRQ007	M	The system shall have the functionality to export the lists of learners with the associated data and the evaluation process stages in formats like XML, CSV and other relevant formats to be able to be further taken over by other systems and/or IT tools.
NFRQ008	M	The technical solution shall have an ergonomic and user-friendly interface that will be coherent in terms of its design elements (structure, function keys, fonts, colors, menus, general layout, chaining monitors);
NFRQ009	M	The system shall have a mechanism to generate explicit error messages, log files to track the running of procedures and support messages to support users. For failed or successful actions alike, the system shall send back a relevant message to the user.

Security requirements

Identifier	Status	Description
NFRQ010	M	Access to data and the specific functionalities of all roles shall be secured by a security system aimed to protect the solution from security threats.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

NFRQ011	M	The system shall allow secure access to functionalities according to the user role and group policy.
NFRQ012	M	The security system shall allow for flexibility in configuration and low connection with the other subsystems.
NFRQ13	M	Security testing at least according to OWASP Top 10 vulnerabilities;
NFRQ14	M	All the fields in the forms filled in by users shall be validated by type both at client and server levels;
NFRQ15	M	During the communication of the system with other systems digital certificates shall be used for identification;
NFRQ16	M	For sensible transactions the timestamp application service shall be used;
NFRQ017	M	A login mechanism with username and password shall be made available for learners.
NFRQ018	M	The Authorization Component shall follow the Login of users.
NFRQ019	M	The system shall be secured at the level of application from users. Moreover, the requested services shall be protected by own security mechanisms. A user shall not be able to use other features and data than the ones allowed according to the authorization level.
NFRQ020	M	Audit. The system shall deliver an interception, monitoring and audit (logging) mechanism of all events happening in the system, as well as all the use exceptions. This information shall be accessible for the users designated to perform the security audits. The information about events shall be accompanied by marking the time of all operations as well as the identity of the users that initiated them.
NFRQ021	M	The transmission of data or edited messages among system components (including the client components, server components) shall be done through security mechanisms, protocols and standards, such as HTTPS.

**Annex 1. RfP_{15/01007} Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

NFRQ022	M	Data filtering. The system shall provide exclusive access to data by implementing general filtering mechanisms to apply to all the performed actions.
NFRQ023	M	Access limitations to prevent users from connecting to the system if an error occurs.
NFRQ024	M	Session management to automatically turn off the users' sessions if no actions were performed for a specific period of time.
NFRQ025	M	Users. The system shall allow for editing the user profiles.
NFRQ026	M	The user login will be done through the system's interface and mechanisms. The administration of information about users and their login data shall be done through the system's administration module accessible through the system's interface.

Performance requirements

Identifier	status	Description
NFRQ027	M	The average number of concurrently connected users is 50
NFRQ028	M	The system performance shall be tested against the performance requirements stated in the technical task and the basic business scenarios;
NFRQ029	M	The performance testing shall include at least two components – load testing and stress testing.

2.2 Specifications of the system's hardware components

The bid solution shall be installed in the governmental cloud ***M-Cloud***.

Service Provider shall include in the technical bid the specifications of the appropriate hardware and software applications for the offered solution.

The cost of the hardware equipment and Microsoft Windows Server software licenses shall not be included in the price quotation.

D. TESTING AND QUALITY REQUIREMENTS

3.1 Planned inspections

3.1.1. Inspections at system development stage

3.1.1.1 Service Provider shall keep a system development version in M-Cloud – Development Environment.

3.1.1.2 At least 70% of the developed specific system components will be subjected to unit testing.

3.1.1.3 Service Provider shall regularly update the components of the development environment and support the regular reports with system demos.

3.1.1.4 Service Provider shall document and address the beneficiary's requests that will be classified into defects and modification requests if appropriate.

3.1.2. Inspections at system delivery stage

3.1.2.1 To perform the delivery Service Provider shall install the system components on an Integrated Environment (according to the configuration requested by Service Provider).

3.1.2.2. Service Provider shall install the system components according to the installation guidelines.

3.1.2.3 Service Provider shall install the system components together with the Beneficiary's system administrator.

3.1.2.4 Service Provider shall configure the system components on the integrated environment.

3.1.2.5 Service Provider shall modify the configuration parameters according to the installation guidelines.

3.1.2.6 Service Provider shall modify the configuration parameters together with the system administrator.

3.1.2.7 Service Provider shall demonstrate the functionality of all the system components.

3.2 Pre-Acceptance Testing

In addition to the Supplier's standard check-out and set-up tests, the Supplier (with the assistance of the Purchaser) shall perform the following tests on the System and its Subsystems before installation will be deemed to have occurred and the Purchaser will issue the Installation Certificate(s) (pursuant to GCC Clause 26 and related SCC clauses).

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

Beneficiary will check if all the automatic mechanisms of integration with other computer subsystems meet the requirements.

Service Provider will perform the accessibility testing according to the Web Content Accessibility Guidelines (WCAG) 2.0. Service Provider will provide details about the testing method and the achieved results.

Service Provider will perform the security testing at least according to OWASP Top 10 vulnerabilities. Service Provider will provide details about the testing method and the achieved results.

Service Provider will conduct the performance testing at least for two components

- A. load testing;
- B. stress testing.

Beneficiary may request an expertise of the testing results from third parties.

The acceptance criteria for pre-acceptance testing are:

- C. 100% of the nonconformities detected at delivery were addressed;
- D. 80% of the accessibility tests for A level are successful;
- E. 100% of the security tests are successful;
- F. performance is better than required;
- G. no critical nonconformities and less than 2 major nonconformities and 30 average and minor nonconformities were detected.

The acceptance date will be the point when all the nonconformities detected when the system is put into production have been addressed.

Operational Acceptance Testing

Pursuant to GCC Clause 27 and related SCC clauses, the Purchaser (with the assistance of the Supplier) will perform the following tests on the System and its Subsystems following installation to determine whether the System and the Subsystems meet all the requirements mandated for Operational Acceptance.

Beneficiary will check the entire business cycle and the related technical performance through operational tests. More specifically:

The operational acceptance criteria: Beneficiary will consider accepting the system if:

- all the positive scenarios have been successful;
- at least 80% of the negative scenarios must be successfully handled;
- no testing scenario will corrupt the data integrity.

The system shall be deemed as accepted when it will operate according to the normal parameters and no major operation deficiencies are detected during 3 (three) training sessions. Major deficiencies shall be considered the errors that cause obstruction of system functionalities that prevents avoiding or overcoming a situation that requires the involvement of the System Administrator or even system developers.

D. PROJECT IMPLEMENTATION REQUIREMENTS

4.1 Project Management

4.1.1 Methodology

Project Management activities must be conducted in accordance with internationally recognized methodology by specific Project Management professional bodies.

In the technical proposal the Service Provider shall submit detailed description of Project Management methodology that will be used in the project and will describe how the proposed experts will be involved.

In the technical proposal, the Service Provider shall submit the detailed plan for provision of services for the entire term of the contract. The service provision plan should contain all requested services, by stages.

In the technical proposal, the Service Provider shall describe how the progress in project activities will be reported. The Service Provider shall describe in detail the reporting procedure in terms of reporting periods, forms used, the information to be contained in reports, and the progress report approval circuit.

The Service Provider shall describe in the project how communication between project participants will be ensured.

The Service Provider will describe in the technical proposal how problems that may arise during the project will be solved. The procedures and forms to be used for management of problems, their escalation and resolution will be presented.

The Service Provider will present in the technical proposal the plan of acceptance to be used in the project for partial receptions / acceptances and the final reception/acceptance. The plan divided by staged and the forms for partial and final reception/acceptance shall be submitted.

The Service Provider will describe in the technical proposal how changes during project implementation will be treated (within the Terms of Reference). The procedure related to change management and the forms to be used in this process will be described.

The Service Provider has to size the project management team so that, for the entire duration of the contract, the people responsible for carrying out this activity are available on-site to ensure the best implementation of the project.

Given the complexity and duration of the project, Service Providers should consider the need for provision of adequate number of man-days for Project Management activities by allocating key and non-key experts. The key experts for these activities are Project Managers.

The Bid must include an initial project plan, with as many details as possible, to meet the requirements of staging and the project deadline.

The implementation of the entire system should cover the following steps:

- Analysis
- Design
- Development /configuration, including internal testing
- Implementation
- Acceptance Tests
- Production entering

Technical assistance and support during the initial plan required to be submitted with the Bid must cover all the steps mentioned above.

4.1.2 Analysis and design

The Service Providers should describe in detail the methodology by which analysis and design activities will be conducted.

The Service Providers must submit along with the Bid the procedures and work instructions for analysis and design implemented within their organizations. The Service Providers must describe the tools that they use so that to ensure:

- collection and record of requirements
- full coverage of the project theme
- requirement changes tracking
- traceability of requirements from project objectives to technical specifications
- modeling of processes and activities in accordance with recognized modeling and representation standards (UML or equivalent)

The Service Providers must submit detailed deliverables that will result from appropriate service delivery at the stages of development and design. The description should include at least the following information:

- form/forms to be used for each deliverable
- description of the contents of each deliverable
- how the content of deliverables will be interpreted

4.1.3 Development / configuration and internal testing

The Service Providers should describe in detail the methodology by which they will conduct development/configuration and internal testing activities and demonstrate the integration of these procedures for analysis and design procedures.

The Service Providers must submit with the bid the procedures and work instructions for development/configuration and internal testing implemented within their organization

The Service Providers must submit detailed deliverables that will result from appropriate service delivery at stages of development / configuration and internal testing.

4.1.4 Implementation

The Service Providers should describe in detail the methodology by which they will conduct implementation activities.

The Service Providers must submit with the bid the procedures and the instructions for implementation within their organization and will demonstrate the integration of these procedures with procedures related to development/configuration and internal testing.

The Service Providers must submit detailed deliverables that will result from the provision of appropriate services in the implementation phase. The description should include at least the following information:

- form/forms to be used for each deliverable description, description of the contents of each deliverable, description of how the content of deliverables will be interpreted

The Service Providers shall describe the procedure of user training. The procedure should include at least the following information:

- description of courses and expected results
- course assessment method

- trainee assessment method
- forms to be used

4.1.5 Acceptance Tests

The Service Providers will present in detail the methodology and procedures by which specific acceptance testing activities will be conducted. The methodology will be adapted to the project.

The Service Providers shall demonstrate that the proposed methodology and procedures they will use fully cover the topic of the project so that it is possible to test all the functionalities identified in the analysis and design phase.

4.1.6 Production entry

The Service Providers must submit the plan to be used upon system’s entry into production. The submitted plan must take into account the logical links between subsystems so as to ensure a coherent production entry.

4.1.7 Requirements regarding the users’s trainings

Identifier	status	Training and Training materials
TRRQ001	M	The Supplier will prepare the curricula for training of the following target groups: (a) Training coordinator(s); (b) Instructor(s); (c) Manager; (d) the System administrator on applications administration / maintenance; The purchaser will approve the curricula before starting the training.
TRRQ002	M	The Supplier will provide training materials in form of manuals for each target group.
TRRQ003	M	The curricula for Group (d) – will contain the entire set of components and controls used for the configuration of the system, containing theoretical and practical lessons. The final exam will be conducted after the trainees will implement an individual task of configuration of the system to be ready for the new training session (simple but covering main components and functions).
TRRQ004	M	The curriculum for Group (d) – System administrator – will contain description of administration tools provided by the system.
TRRQ005	M	The Supplier will provide hands-on training to several specialists appointed by the Purchaser, considered as target group (d), aimed

**Annex 1. RfP15/01007 Provision of Services for the Elaboration of the eLearning System
for Local Elected Officials from the Republic of Moldova**

		to deliver skills in future maintenance of the provided solution. Along with it a curriculum for formal training will be developed, including relevant system maintenance questions, and help desk maintenance aspects.
TRRQ006	M	The curriculum for Group (a), (b) and (c) users – will contain detailed explanation of the utilization of the application(s) for interaction between different users and roles and the utilization of the eLearning platform; detailed responsibilities of each role, utilization of application to implement necessary activities, reporting and other appropriate information. The training will also contain practical utilization and walkthroughs for easier understanding of materials. The exam is obligatory.
TRRQ007	M	The Supplier will conduct at least 20 hours of formal training and hands-on training during the period of installation of the system, and during the piloting period.
TRRQ008	M	Training for all groups must be conducted in Romanian.

E. REQUIRED FORMAT OF TECHNICAL PROPOSAL

5.1 Description of Information Technologies, Materials, Other Goods, and Services

- 5.1.1 The Service Provider must provide detailed descriptions of the essential technical, performance, or other relevant characteristics of all key Information Technologies, Materials, other Goods, and Services offered in the bid (e.g., version, release, and model numbers). Without providing sufficient clear detail, Service Providers run the risk of their bids being declared non-responsive.
- 5.1.2 To assist in the bid evaluation, the detailed descriptions should be organized and cross referenced in the same manner as the Service Provider's item-by-item commentary on the Technical Requirements described in Section 5.2 below. All information provided by cross reference must, at a minimum, include clear titles and page numbers.

5.2 Item-by-Item Commentary on the Technical Requirements

- 5.2.1 The Service Provider must provide an item-by-item commentary on the Purchaser's Technical Requirements, demonstrating the substantial responsiveness of the overall design of the System and the individual Information Technologies, Goods, and Services offered to those Requirements.

- 5.2.2 In demonstrating the responsiveness of its bid, the Service Provider is strongly urged to use the Technical Responsiveness Checklist of the Technical Requirements. Failure to do so, increases significantly the risk that the Service Provider's Technical Bid will be declared technically non-responsive. Among other things, the checklist should contain explicit cross references to the relevant pages in the Service Provider's Technical Bid.

Note to Service Providers: For each of the Technical Requirements, the Service Provider must describe how its Technical Bid responds to each Requirement. In addition, the Service Provider must provide cross references to the relevant supporting information, if any, included in the bid. The cross reference should identify the relevant document(s), page number(s), and paragraph(s). The Technical Responsiveness Checklist does not supersede the rest of the Technical Requirements (or any other part of the Bidding Documents). If a requirement is not mentioned in the Checklist, that does not relieve the Service Provider from the responsibility of including supporting evidence of compliance with that other requirement in its Technical Bid. One- or two-word responses (e.g. "Yes," "No," "Will comply," etc.) are normally not sufficient to confirm technical responsiveness with Technical Requirements. References to Internet resources in are not acceptable and will be treated by evaluators as missing information.

5.3 Preliminary Project Plan

- 5.3.1 The Service Provider must prepare a Preliminary Project Plan describing, among other things, the methods and human and material resources that the Service Provider proposes to employ in the design, management, coordination, and execution of all its responsibilities, if awarded the Contract, as well as the estimated duration and completion date for each major activity. The Preliminary Project Plan should also state the Service Provider's assessment of the major responsibilities of the Purchaser and any other involved third parties in System supply and installation, as well as the Service Provider's proposed means for coordinating activities by each of the involved parties to avoid delays or interference.
- 5.3.2 In addition to the topics and points of emphasis, the Preliminary Project Plan MUST address all activities listed in the Implementation Schedule.

5.4 Confirmation of Responsibility for Integration and Interoperability of Information Technologies

- 5.4.1 The Service Provider must submit a written confirmation that, if awarded the Contract, it shall accept responsibility for successful integration and interoperability of all the proposed Information Technologies included in the System, as further specified in the Bidding Document.