Annex VI

TECHNICAL SPECIFICATION

- for the development of information systems in agriculture, integrated within the System for Identification and Traceability of Animals (SITA): a Register of Farmers, and; Management of sanitary-veterinary supervision.The development forms a part of the EC/FAO Programme on linking information and decision-making to improve food security 2010-2012 (GCP/GLO/275/EC), Republic of Moldova, Animal traceability component.

Contents

1. Introduction

The present document contains the requirements on the implementation of the Farmer Registry module, Inspections and internal verifications module, Management of strategic measures module and GIS module.,

One of the main required ideologies consists in enforcement of the ensuring strategy of the final solution integrity and continuity in exploitation and development. Depending on necessities, the new functional modules will be launched separately, taking into account existing possibilities and needs.

All the functional modules have to be performed taking into account the use of a common administration, configuration and classification module in order to make the system more easy to use.

Present specifications represent a conceptual view on the functional modules, including issues related to the purpose and objectives, principles and main characteristics, eventual data structures of the informational system. Specifications contain a brief description of the main components of the future solution, with a focus on the principles and functionalities that are to be taken into account in the process of elaboration of each component.

1.1 Terminology and abbreviations

The following terms and definitions are used in this concept:

- **Animal** – any living organism, which refers to one of the following species: bovine, swine, sheep, goats, equine, donkeys and their descendants obtained from their mating and which is subject to identification and registration, with the exception of wild animals;
- **Animal holding card** – holding identification document, attributed together with sanitary veterinary certificate, resulting from entering in database of information related to the holding, receiving a single registration number;
- **Animal identification** – attribution of the identification number by applying the tags, including electronic ones, which will ensure animal identification without harming their wellbeing and respecting traceability requirements;
- **Animal identification form** – primary evidence document filled in after the identification of the animal, it represents the basis for the registration of the animal in "RSA". It is printed out from DB and issued to the animal keeper as a document confirming the registration of the animal or the holding in the national DB;
- **Animal identification and traceability system** – a set of elements and procedures that ensures observance of the traceability principle, which administration is subject of only one operator. Information of the Animal Identification and Traceability System, except those confidential from the veterinary point of view, are component part of the State Animal Register;
- **Animal keeper** –individual or legal entity having animals in permanent possession as animal owner and/or holding keeper, or as temporary animal caretaker. This category includes with no exceptions the leaders of animal groups, vehicles transporting animals, as well as administrators of holdings like: animal markets or exhibitions, summer camps, animal farms, animal collection centres and slaughter units;
- **Animal owner** – individual or legal entity that owns, uses and has animals;
- **Animal identification mean –** tags or microchips (transponders) can be used as animal identification means:
- **Architecture** – all essential solutions regarding organization of the software system, as well as its set of elements and structural interfaces, together with cooperation described in the terms of these elements;

- **Automatic Informational System (SIA)** – all hardware and software resources designed for information processing, information resources and user infrastructure;
- **Automatic informational systems at the national level** – automatic informational systems functioning within public and state administration authority;
- **Browser** – (eng. Web browser) represents the software product offering the possibility to access web-sites, meaning to open a web page in Internet to process, view and pass from one page to another;
- **Competent authority** – Sanitary-Veterinary for Animal Origin Food Safety agency, (ASVSPOA**)** representing the national authority that regulates, coordinate and controls the Animal Identification and Traceability System in the Republic of Moldova;
- **Database** – all combined data, organized in accordance with certain rules, providing general principles for data description, storage and processing;
- **Function** – set of actions to achieve business process, providing a useful result to a specific business actor;
- **Household (holding or exploitation)** – any animal facility, building or outdoor enterprise for animal breeding, keeping and handling;
- **Identifier of the object –** data attribute, which sense uniquely establishes the informational object;
- **Internet** – public network of computers worldwide providing access to informational resources situated in this network. Internet can be described as a network comprised of local networks interconnected via routers. As interdependent term is used:
- **Intranet** – corporate internal network, using Internet standards and principles but will limited access;
- **Object** – virtual reflection of the really existing entities, both material and non-material, containing the status and comportment;
- **Process –** fixed sequence of events performed by a group of logically related activities that use organizational resources to obtain the result in the achievement of organizational goals;
- **Role** – specific behaviour and obligations of a person or individuals working in a team (working group);
- **Scenario** – presentation of knowledge using a fixed sequence of events to determine the results of interaction between the known elements;
- **Software** – all programs of the information processing system and of the program documents required for the operation of these programs;
- **Tag** – animal identification mean made of plastic material, presenting a printed single identification number of the animal;
- **Transponder** - electronic identification device (microchip) ensuring double functionality: storage of the single identification number and its transmission in case it is activated by an appropriate radio frequency field.
- **Web portal –** set of software, including technologies of integration and presentation of information obtained from different sources in the network. Web portal comprises searching tools, configured as a result of coordination with users, modifying mechanisms shaped from flexible portlets of the modular structure and dynamic content;

ACRONYMS

AIPA - Interventions and Payments Agency for Agriculture;
ASVSPOA / ASV/ CSV - Sanitary-Veterinary and Animal Origin Food Safety Agency;
BO – Business Operator;
CUATM Code - standard Country or Area Code for Statistical Use;
CUIÎO Code - identification number assigned and used in the database of the National Bureau of Statistics;

DSVR– Direction of Veterinary Sanitary Regulation;
GIS – Geographic Information System;
IC – Inspection and Control;
ID – Identification;
IDNO (Identification Number of Organization) – identification number of legal entities with English abbreviation;
IDNP (Identification Number of Person) – identification number of an individual, used in international practice as an English abbreviation;
LRDV - Regional veterinary laboratories (*located in Drocia, Donduseni, Cahul*);
MAFI - Ministry of Agriculture and Food Industry;
MD – Republic of Moldova;
MH - Ministry of Health;
MSM / MMS - Management of Strategic Measures;
MS – Sanitary measures;
MSSV - Management of Sanitary-Veterinary Supervision;
PCSV – Veterinary-sanitary control point;
PVD / MVLP – Private Veterinary Doctor;
RCVD / CRDV/ LRDC – Republican Centre for Veterinary Diagnostics / National Reference Laboratory (*located in Chisinau*);
RM – Republic of Moldova;
SARBTA – Rapid Alert System;
SE "AR" – State Enterprise Animal Register;
SIA – Automatic Information System**;**
SITA – System for the Identification and Traceability of Animals;
SVC – Sanitary Veterinary Control;
SVCP – Sanitary Veterinary Check Points;
VD – Veterinary Doctor.

2. General Information

2.1. Objectives

The Farmers Registry will be designed as an integrated administrative register of farmers, an umbrella register for other important registries used for the implementation of agricultural policies.

The main objective of the Farmers' Register consists in highlighting the situation of the farmers registered with AIPA MD. An important part of the registry is to capture, store and process information regarding farmers in accordance with the legislation in force and likewise to keep track of all the changes brought to the identification data.

The main purpose of this integrated register is to link and unify all the registers by establishing a unique identification number of the farmer.

In order to successfully implement the Register of Farmers it is essential that the input data and their updating to be located at the local level (regional offices) in order to establish a close relationship with the farmers and to use the same organizational and informational infrastructure for building and updating other important register within the agriculture in direct relation with the administration, management and control of agricultural subsidies.

The Automated Information System for Management of Sanitary-Veterinary Supervision with the following modules:

The “Management of strategic measures” module will be designed for animal lifecycle information management. This module is needed to support the elaboration, record and monitoring execution of the annual Strategic Plan drafted by ASV and generate the required data for the annual sanitary-veterinary management plan.

The “Inspections and control for animal traceability” module will extend the actual SITA system. By functional extension of SITA it will ensure compliance of the principle of traceability for live animals by implementing an informational system for inspections and control that would enable and facilitate control of animal farms (holdings) registered in SITA DB and selected on the basis of random selection, as well as automation of the internal control monitoring of the Competent Authority in the context of launch of inspection procedures and an improvement of data quality, realization of the traceability realization and improving the activity of the competent authority.

The “GIS Systems of SIA SITA” is designed for GIS informational support of the system. The system will provide a map with animal and farms (holdings) related information layers and help identify geographical locations and areas of interest with the scope of sanitary veterinary supervising.

2.2. Beneficiaries of the system

There are two beneficiaries of this system:

- Intervention and Payments Agency for Agriculture, beneficiary of the Farmer Registry system
- Sanitary Veterinary for Animal Origin Product Safety Agency for the pilot of the SIA Management of Sanitary Veterinary Supervising modules

2.3. Basic principles

General principles that will be enforced during implementation of the project are the following:

- Legitimacy principle, implying creation and use of System in accordance with the legislation in force;

- Principle of respect for human rights, implying the use of the System in strict compliance with the legislation in force, international treaties regarding human rights, to which Moldova is party;
- The principle of data solidity in System, assuming entering of data into the system only on the basis of mentions from the documents considered to be informational source;
- The principle of integrity, plenitude and accuracy of data:
- Data integrity means the state of data when they retain their contents and equally interpret each other in terms of influence of random factors. It is considered that data maintain their integrity in case they have not been denatured or destroyed (cancelled);
- Data plenitude means the maximum volume of information accumulated concerning juridical acts in accordance with the legislation in force;
- Data accuracy means the degree of correspondence of stored in computer or in documents data with the real situation of the objects displayed by the respective domain of the system;
- The principle of state identification of the registration objects, providing that each registered subject has a single identification number, which remains unchanged its whole period;
- The principle of control on the development and use of System, assuming all organizational and technical program measures that ensure a high quality of developed state informational resources, a maximum degree of reliability for their storage and collection, including precision of use in accordance with legislation in force;

2.4. Main tasks

By implementing this system the following goals will be achieved:

1. Developing and implementing the Farmer Registry System
   The system must acquire, store and process the information of the farmers.
2. Integration with the Animal Register System (SITA)
   Electronic farmer registry need to integrate with Animal Register System in order to view the information about the animal registration of the farmer and the holding identification card.
3. Integration with the General Agricultural Census
   Farmer Registry system need to integrate with General Agricultural Census, as census results will provide the initial data for Farmer Register System
4. Developing and implementing the pilot modules for Management of Sanitary Veterinary Supervising
   The “Inspections and control for Animal traceability” module will extend the actual SITA system. The need to implement a pilot for this module is generated by the importance and the complexity of this module for the actual SITA system.
5. Controlling the data provided by farmers on animal declaration, stored into the SITA database system
6. Creating a common administration and configuration system

3. Normative and legal framework

The development of the system is based upon the following framework:

- Constitution of the Republic of Moldova of 29 July 1994;
- Law 221-XVI regarding sanitary veterinary activity;
- Law 231-XVI regarding identification and register of animals;
- Government decision no 167 from 09.03.2010 regarding utilization of resources from the subvention of agricultural producers fund.
- Government Decision no. 282 from 11.03.2008 regarding the approval of the national strategy of sustainable development of the Republic of Moldova’s agro-industrial complex (2008-2015)

- Government Decision no. 60 from 04.02.2010 regarding the creation of Intervention and Payments Agency for Agriculture
- Parliament Decision no. 137 regarding the approving the use of the fund to subsidize farmers
- Government Decision 1093 on the approval of the Regulation regarding procedures and documents related to SITA
- National and European normative acts related to animal health and welfare and controls;
- Government Decision 794 of 22 December 1993 “Regarding improvement of sanitary veterinary assistance in zoo technical sector”;
- Government Decision of RM 356 of 22 April 2005 “Regarding approval of the Action Plan Moldova -EU”;
- Law 71-XVI of 22 March 2007 regarding registers (Official Monitor of RM, 2007, nr. 70-73, Article 314);
- Government Decision 225 of 9 march 2005 on the National Strategy for establishment of informational society – “Electronic Moldova” (Official Monitor of RM, 2005, 46-50, Article 336);
- Government Decision 476 of 27 March 2008 regarding certain actions to achieve National Strategy for establishment of informational society – “Electronic Moldova” in 2008 (Official Monitor of RM, 2008, 69-71, Article 456);

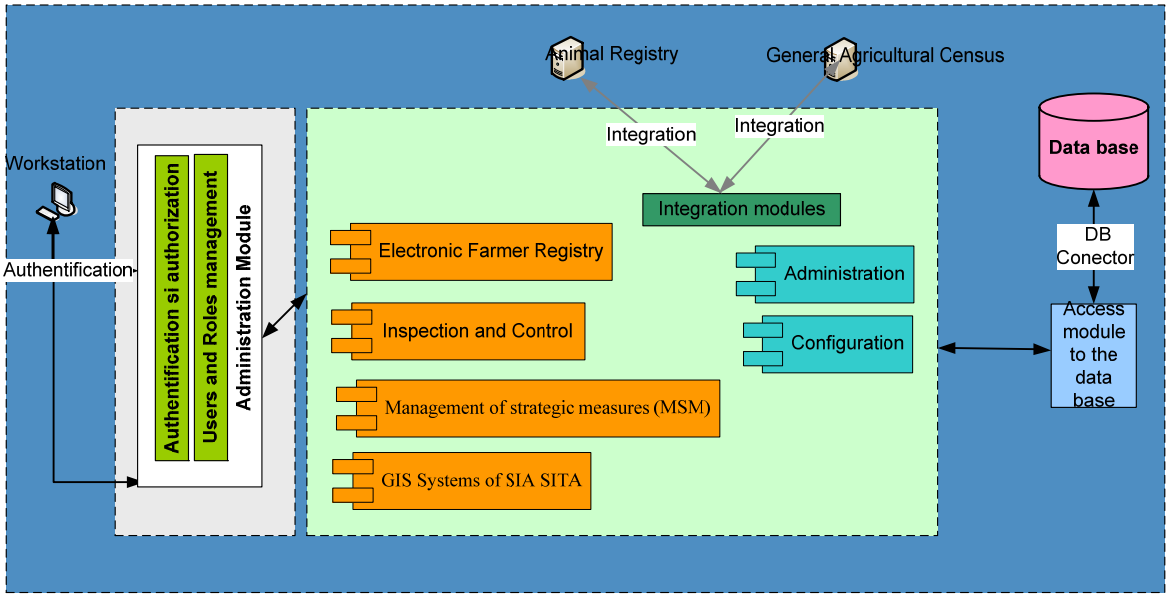
4. System requirements

4.1. System architecture

The system must be based on a centralized architecture in order to allow a minimum administration cost. The system will be modular. It must be based on a 3 levels architecture which will allow a higher level of performance and scalability.

From a functional point of view, there must be a transparency, meaning that each user accesses the modules which are appropriate for the institutional level belonging to, the data being aggregated and interpreted properly.

The architecture for the system is presented in the figure below:



4.2. System integrity and security

- The solution must ensure data confidentiality, security and integrity, regardless of their input or storage location;
- The solution must allow a complete control over the access of the users to the applications and databases systems;
- Access rights will be granted to users, separated depending on the type of application, security level and organizational level.

4.3. System flexibility and functionality

- The technical solution must provide flexible input and validation mechanisms, data import-export and database query systems;
- The technical solution must provide an ergonomic and user friendly interface for the user, which will be able to present coherence in terms of interface design (structure, functional keys, fonts, colours, menus, etc);
- The offered system must be developed on a modular basis and it must allow the possibility to the parameterize and configure the components;
- The applications must be able to display error messages and help messages for users support;
- The system must use a set of standard data warehouses, updatable by the administrator.

5. Functional description

5.1. Agricultural Electronic Registry Module

The Farmers' Electronic Registry must acquire, store and process the information of the existing farmers besides the information of the farmers who have applied for subventions.
The Farmer Registry system must provide the following features:

- Inputting registration forms in the Agricultural Electronic Registry
- Verifying and validating the registration forms
- Managing the validated and erroneous registration forms
- Generate notifications
- Generate reports

5.1.1. Recording farmer registration forms

This process entails the receipt by an operator of the registration form from the farmer. It does not entail the verification of the correctness of the data but only of the input of all the data supplied by the farmer in the application. The system shall store the data of each farmer, the legal organization (family businesses, collectives, limited partnerships, incorporated companies, limited liability companies, manufacturing associations, enterprises, individual enterprises, etc).

The farmers' registration system must allocate a unique identification number for each farmer. This unique ID shall be generated automatically based on the procedure agreed to allocate unique IDs. The unique ID must be used to identify each applicant in the communication with the systems with which it shall integrate. A unique ID must not be reallocated and must not be removed from the database.

For each applicant, according to the registration ID, the system shall store the following information:

- AIPA Reg. No.
- Registration date
- Organizational structure
- Farmer/enterprise name
- Fiscal code
- IDNP
- CUATM Code
- IDNO Code
- Business address
- City
- District
- Hard line phone
- Mobile phone
- Name and surname of the administrator
- Name and surname of the legal representative
- Bank name
- Bank address
- Bank code
- Applicant's bank account
- Professional training
- Institution graduated
- Association to which the applicant is a member

5.1.2. Formal verification of the registration forms

The formal verification of the registration forms entails the formal verification of the registration forms submitted by the farmer. It does not entail the verification of the data correctness, but only that all fields in the form have been filled in.

5.1.3. Validate the registration form

This process entails the verification of the correctness of all the data provided. The verifier must determine if the data provided complies with the additional documents supplied by the farmer (e.g.: if IDNP was input correctly, if the bank account was input correctly, etc). After verifying and correcting all data provided, the verifier shall be able to validate the Farmer Registration Form.

5.1.4. Approve the registration form

The approval of the registration form entails the activation of the "Approved" status, through the verification of the data compliance, according to standards enforced by the system. If data or registration form shall overlap, the system shall display a message error (or a list of errors if there are several errors). This process entails a set of actions which verify the personal data of the farmer:

- The bank account is valid
- Verify if there is another farmer registration form with the same data
- Verify if IDNP is valid
- Verify if CUATM is valid
- Verify if IDNO is valid

If there are errors, the system must generate a Notification which will be sent to the farmer who must be informed that he/she has supplied incorrect information. A registration form with errors cannot be approved. A registration form can only be approved if there are no errors.

5.1.5. The workflow for the farmer registration forms

1. ***Unverified registration forms:*** this status entails only the input of data and not the verification of the data completeness. The operator inputs the data in the system but does not carry out a formal verification. All registration forms which have not been formally verified shall automatically receive this "Unverified" status.
2. ***Verified registration forms:*** this status entails that the data have been formally verified and that they have been found compliant. The verifier shall check that all fields (at least the mandatory fields highlighted on the registration form) have been filled in.
3. ***Validated registration forms***: it is entailed that the farmer registration form has been verified for correctness. The verifier must determine if the data input in the fields comply with the additional documents supplied by the farmer (e.g.: if IDNP was input correctly, if the bank account was input correctly, etc). After verifying and correcting all data supplied, the verifier shall have the possibility to validate the Farmer Registration Form.
4. ***Approved registration forms***: this status shall be allocated to the requests which have been validated and which do not have any errors which could prevent the registration in the Farmers Registry. If there are administrative errors in the registration forms (duplicate forms, incorrect INDP, invalid bank account, invalid CUATM code, invalid IDNO code) the system shall highlight them and the user can classify them as follows:

- Blocking errors: errors which do not allow the registration and approval of data and which result in the rejection of the registration form
- Justifiable errors: errors which are not considered serious and which can be justified by the farmer with documents; in this case the registration form can be saved and approved

The approver shall confirm the correctness of the data and shall send a notification to the farmer to confirm that the request was approved and that the farmer has been registered in the Farmers Registry.

5. ***Rejected registration forms:***

This status shall be allocated to all registration forms which have not passed the administrative verification and which contain unjustifiable errors (or they have not been justified at the request of the operator/verifier). The system generates a registration form rejection notification which shall be sent to the farmer.

5.1.6. System operations

Add farmer registration form

The system must allow at any time the registration of a farmer registration form

Modify a farmer registration form

The farmer registration form can be modified as long as the registration form status is "Unverified". Once the request goes into one of the following states: Verified, Validated, Approved or Rejected, it cannot be modified.

View farmer registration form

The system must allow at any time the visualization of a farmer registration form.

Generate notifications

The system must allow sending a Notification after Approving or Rejecting the farmer registration form.

5.1.7. Farmer Registry Reports

The system must allow the generation of the following reports:

- Full list of the registered farmers (farmers registration forms with the "Approved" status)
- The list with the farmers registered on a certain district (farmers registration forms with the "approved" status for the farmers in a certain district)
- List with the farmers registered in a certain period of time (farmers registration form with the "Approved" status based on the registration date)
- List with the farmer registration form with the "Unverified" status
- List with the farmer registration form with the "Verified" status
- List with the farmer registration form with the "Validated" status
- List with the farmer registration form with the "Rejected" status

5.2. SIA „Inspections and Control" (IC)

SIA IC includes two sub-modules:

1. Managing the internal verifications of the responsible authority.

Ensures the transparency of the planning, initiation and execution of the inspections by the employees of the responsible authority, along with the correct monitoring of health and safety regulations

The following are involved:
The inspection of the DSVR (animal health department) activities;
The inspection of the activities of the official veterinary of CSV
Inspecting the activities of the mandated MVLP;

2. Managing the inspections of the farms registered in SITA

Verifying the compliance with the legislative regulations of the implementation of the animal traceability principle
SIA « IC» includes the following functional modules:

Table 1 Functional requirements of the IC Module

IDENTIFIER	FUNCTIONAL REQUIREMENT DESCRIPTION
FR3.0	**The "Inspections and internal verifications" module will include user management features**

IDENTIFIER	FUNCTIONAL REQUIREMENT DESCRIPTION
FR3.0.1	The «Administration» module is based on the SITA management tool and must allow the management of roles and rights in compliance with the features specified by the «IC» Module.
FR3.1	**The «Planning inspections and internal verifications » module**
FR3.1.1	Creating the annual Inspections and Verifications Schedule by ASV.
FR3.1.2	Calendar scheduling and distribution of the annual Inspections and verifications Plan on categories (types of farms, species, areas ...)
FR3.1.3	Appointing responsible persons
FR3.1.4	Establishing the reporting and verification period for the creation of the Inspections and Verification Plan
FR3.1.5	Approving the distributions
FR3.1.6	Statistical and analytical analysis of the Inspections and Verifications Plan
FR3.2	**The «Inspections and Verifications Management » module**
FR3.2.1	Ensuring the preparation stages. Extracting the data required for the number of animals and the history of verifications from the SITA DB etc.
FR3.2.2	Preparing the documents required to carry out the verifications: data on livestock owned, farm data, owner data
FR3.2.3	Printing the control file approved by ASV for standardized management
FR3.2.4	Recording the verifications carried out
FR3.2.5	Registering the results of the verification
FR3.2.6	Triggering repeated verifications based on the results of the previous verifications
FR3.2.7	Registering repeated verifications
FR3.2.9	Registering the final results.
FR3.3	**The «Documents» module**
FR3.3.1	Setting up standardized templates for the documents required for the verification: o List with the control items; o Te Farms electronic registry o The standard "Control file" template;
FR3.3.2	Printing the standardized forms with the updated information required for the inspection from the DB.
FR3.4	**The «Reports» module**
FR3.4.1	Comparison report between the percentage of fulfilling the inspections and verifications schedule at ASV level;

IDENTIFIER	FUNCTIONAL REQUIREMENT DESCRIPTION
FR3.4.2	Comparison report between the status of fulfilling the inspections and verifications schedule at each District and at Central level
FR3.4.3	Statistical and analytical reports regarding the execution of the inspections and verifications schedules and initiated based on risk analysis
FR3.4.4	Analytical reports for the calculation of the error ratio established based on the inspections scheduled in relation to the actual information from the SITA DB .
FR3.4.5	Establishing the percentage of inspections for the management year resulted from the error percentage calculated

5.2.1. The «Planning Inspections and internal verifications » module

Drafting the Annual inspections and control Plan by ASV.

The responsible authority carries out verifications based on a risk analysis. The risk analysis considers all relevant factors, especially the animal health and the epizootic status.

A total number of 10% of the farms registered must be verified based on the risk analysis. The number can be increased by the responsible authority based on the results of the reports for the verifications executed and presented by DSVR for the previous year plus the error percentage calculated from the percentage of defects detected by the inspections ii.

Generally, all livestock from the selected farm shall be subjected to the verifications. However, for farms with over twenty heads the responsible authority must be authorized to limit the verifications to a representative sample.

Selecting the farms for scheduled verifications:
The responsible authority selects the farms from the SITA database which shall be verified based on a risk analysis which takes the following into consideration:
The number of animals on the farm;

The public health and animal health items, especially the existence of previous outbreaks of animal diseases;
The amount of the annual subvention for the animals in the species subjected to the requested identification and/or paid to the farm;
After the establishment of the list with the items subjected to the inspection, they must be distributed based on the area and shall be input in the inspections calendar.

One of the parameters from the inspections and verifications items is the person responsible for its execution. The responsible person is selected from the list with the employees of the territorial department of the authority responsible for that respective farm.

The final version of the inspections schedule with the selected parameters is published in the system in order to be accepted by the responsible persons.

The criteria for the selection of the farms for inspections based on risk analysis

DSVR, shall implement each year the monitoring and inspections schedule for at least 10% of the holdings, livestock markets, collection centres, season pastures and slaughterhouses in order to verify all items specified in the legislation in order to ensure the traceability of livestock: verifications of the correctness of the data registered in RE, comparing the data registered in the DB with the actual status of the farm, verifications of the data regarding livestock migrations.

All errors and defects detected after the inventory within the strategic measures shall be the basis for the initiation of the inspection. The correction of the DB errors is only made based on inspection documents which replace the request for the registration in the DB of legal infringement cases. The defects detected after the inspections shall be reported immediately to DSVR. DSVR shall report each month to the responsible authority the results of fulfilling the inspections plan and of the monitoring activities.

The responsible authority shall monitor the implementation of the legislation regarding the identification and traceability of livestock by DSVR through evaluation inspections.

The SITA National operator, based on risk analysis criteria established by the Responsible authority selects the involved farms from the database, groups them on districts and forwards the list for approval to the Responsible Authority in order to draft the annual inspections and verifications schedule.

Criteria are established by the responsible authority and can be amended or modified based on risk analysis.

The main criteria for the selection of farms based on risk analysis are the following criteria:

- The selection of farms with large livestock transactions: livestock import/export operations, slaughterhouses, collection centres, quarantine;
- The selection of the farms whose animal products end up in public consumption: livestock complexes, breeding farms, farms – natural persons and legal entities;
- The selection of the livestock concentration operations resulted from various farms and surveillance areas (pasture, animal markets, shows, competition events);
- The selection of the farms which have not registered any events in the last 12 months;
- The selection of the closed farms;
- The selection of the farms which have registered various registration errors or which do not comply with the specified field of activity;
- Random selection of farms;
- The selection of the previously inspected farms which as a result of inspections have registered infringements of traceability regulations;
- Defects detected after the inventory of farms during the execution of strategic measures;
- Registration of livestock which exceed the maximum age identification threshold in the DB;
- Farms owned by natural persons with large volume livestock transactions: collectors, transporters;
- Farms with a number of heads higher than 20;
- Registration of newly born animals without the indication of the mother criocode;
- Registration of the relationship through criocode for the cases where the mother is male or then the offspring have a higher age than the parents;
- Verification of exceeding the validity deadline of F2 – the veterinary health certificate, coincidence based on validity with a health certificate;
- Information research and overlapping cases resulted from other veterinary documents which are involved in the traceability process.

The responsible authority approves the annual inspections schedule for at least 10% of the farms registered in the DB for DSVR.

Distribution of the Annual Inspections and verifications schedule for groups (types of farms, species, areas)

After establishing the list with the holdings subjected to the inspections they are distributed based on the area and shall be input in the inspections calendar schedule.

Appointing execution responsible persons

One of the main parameters of the holdings subjected to inspections is the person responsible for its execution. The responsible person is selected from the list with the employees of the territorial department of the authority which is responsible for that holding. The users can execute inspections or modify the status of the registered inspections only using the special procedures established by the system administrator after a request made by the competent authority and after registering the request in the DB.

Establishing the reporting and control periods for the creation of the Inspections and Verifications Schedule

The inspections are distributed according to the calendar schedule based on the selection criteria which depend on various factors such as:

Repeated verifications;

The final version of the inspections calendar with the selected parameters is published in the system to be accepted by execution responsible persons.

Approving the distributions

Each DSVR responsible must accept the plan proposed by ASV through the approval feature provided by the planning module.
ASV verifies the approval of the plan distributed by all responsible persons on the field.

Statistical and analytical analysis of the Inspections and Control Schedule

All responsible persons on the field and at central level have the possibility of carrying out statistical and analytical analysis for the inspections scheduled based on the following criteria:
Number of inspections each month
Livestock registered at the inspected holdings
The number of inspections in each area at various time periods
Etc.

5.2.2. The «Inspections and verifications management» module

Ensuring the preparatory stages

The inspections must be prepared according to the following stages:

The appointment of the inspection team (the inspections can be carried out by inspectors from the animal health department or in collaboration with inspectors from other departments or services, other responsible institutions);
Receiving and studying the requirements of the schedule;
Drafting an actions plan;
Documentation regarding the legislation applicable for the purpose (a sufficient period of time shall be allocated in order to study the issue);
Establishing the number of objectives according to the purpose;
Documentation on the previous activity and of the latest evaluations of the farms involved;
Preparing the portfolio, for example: forms, guides, office equipment, stamp etc;
Preparing other materials, such as: the photo camera;
Requesting the delegation;
Requesting additional funds for the delegation, if applicable;
During the preparation stage, the user must extract the following data from the SITA DB: target's address, target's owner, owner, livestock, verifications history etc;
The data can be acquired through the SITA analytical report for the preventive analysis of the scheduled level of work.

Preparing the afferent documents

The responsible person must have available an IT support with the standardized format with the possibility of printing various afferent documents. One of the printed documents can be on the list with the livestock from the farms registry.

Preparing the control documents

Printing the control documents approved by ASV for standardized management:

Inspection Notice;
Verifications Files

The above-mentioned documents are the basic documents of the IC module and after printing they must be filled in with the initial data of the control target and shall be uniquely numbered. All subsequent registration of electronic or printed documents (repeated control, contraventions protocol, Notifications, etc.) must include the unique identifier of these documents.

Registering the finished verifications

The finalization of the verification shall be specified in the system by the introduction of the finalization date. Based on the date registered, the statistical schedule performance report and the deadline compliance report shall be generated.

Registering the results of the verifications

From the printed inspection notice the results of the inspections are input in the electronic inspection notice. The scanned copy of the printed document is attached to the electronic inspection notice.

If required the deadline for the repeated verification shall also be specified.

When establishing the resolution deadlines in the control Protocol, the defects detection shall be made based on the deadline specified in the regulations and the inspector shall take the following into consideration:

Objective identification of the defects/deficiencies which can represent risk factors;
Primary evaluation of the risk factor and establishing the danger levels, considering their nature, and at the same time the inspector shall also take the following into consideration:

The number of defects detected, human resources available, the specifics of the equipment resolution procedure, improvements, technological procedures used for the resolution according to the law.

After establishing the risk factors, based on the defects/deficiencies detected, the inspector shall analyze their probable impact on the health of the food or animal health and shall establish resolution deadlines. For the resolution period the respective status of the farm established by the inspector is automatically instated in SITA. The status shall be modified after the resolution of defects.

For defects/deficiencies which do not have an immediate impact on the health of the food or animal health, extended deadlines can be granted through the synchronization of the status on the spot with the evaluation files drafted by the technical departments.
In case of contraventions the Contravention acknowledgement minute shall be drafted and the scanned version of the printed documents shall be attached.
If there are any complaints the complaint receipt date and the response date shall be registered.

Initiating repeated verifications based on the results of scheduled verifications

The repeated verifications schedule is generated based on the general schedule and on the data registered in the result of the previous verifications.
The repeated verifications are made according to the standardized procedure described in the previous paragraphs.

Registering repeated verifications

The execution of the repeated verification is registered in the system through the registration of the execution date. Based on the registered data, the schedule execution statistical report and the deadline compliance report shall be generated, while the deadline for the resolution of the detected defects shall be activated. Upon its expiry the system shall automatically notify this to trigger the repeated inspection.

5.2.3. The «Documents» module

Establishing standardized document templates

The system must allow the creation of standardized templates for the documents required to carry out the verification:

- List with the control items;
- Control target passport (address, owner data, other data)
- Farm registry

- Control file
- Verification file;

Printing standardized forms from the DB din

The module must ensure the possibility of printing standardized forms filled in with the updated information in the DB required to carry out the inspection.

5.2.4. The «Reports» module

The reports module must ensure a set of statistical and analytical reports for the inspections.
The responsible authority shall receive a monthly and annual report from DSVR which shall include information regarding the status of the annual inspections schedule approved by the responsible authority. The monthly/yearly report is presented according to the model in Appendix no.7 of the "Documents and procedures afferent to the inspections and verifications system for the implementation of the livestock traceability principle" regulation".

Each monthly/annual report is drafted according to the standardized national format established by the responsible authority which includes at least the following information:

1. Reason for the selection of the farm for the verification:
   Inspection scheduled according to the annual schedule approved by the Responsible Authority;
   Repeated inspection (to verify the resolution of defects);
   Inspection triggered upon the detection of defects related to the traceability of livestock during the inspections on other fields;
   Inspections initiated based on the differences between the data in the farm with the data from SITA DB.

2. Persons present throughout the verification;

General information

Total number of farms registered throughout the monitoring area of DSVR at the start of the reference period;
Total number of animals registered at the start of the reference period;
Total number of verifications carried out;
Total number of farms controlled;
Number of animals verified form the verified farms;
Total number of animals in the verified farms;
Legislation infringement cases for the overall and species identification field;
Number of animals involved;
Number of farms involved;
Incompliance cases for the identification of livestock belonging to the sheep species;
Incompliance cases for the identification of livestock belonging to the goat species;
Incompliance cases for the identification of livestock belonging to the cattle species;
Incompliance cases for the identification of livestock belonging to the swine species;
Incompliance cases for the identification of livestock belonging to the horse species;
Differences from the farm registry;
Absence of livestock movement notifications – total;
Absence of notifications for the arrival of livestock after the modification of the farm;
Absence of notification of the output of livestock from the farms, which have been transferred to another farm;
Defects of the transfer documents;
Animals/farms which present a single case of incompliance from the cases presented at the previous paragraphs;
Animals/farms which present several cases of incompliance from the cases specified in the previous paragraphs;

Total number of incompliance cases regarding the animals/farms indicated at the previous paragraphs;
Verification results:
Total number of legislation incompliance cases for the traceability principle by the owners;
Total number of resolved cases;
Total number of cases undergoing the resolution;
Total number of suspended farms;
Total number of closed farms;
Total number of farms with sanctions, sanitary-veterinary restrictions;
Total number of contraventions;
Number of contestations;

The following reports can be presented as an example:
Comparison report of the percentage of fulfilling the inspections and verifications schedule at ASV level;
Comparison report of the fulfilment status of the inspections and verifications schedule at District and Central level;
Statistical and analytical reports for the establishment of the inspections and verifications scheduled and initiated based on the risk analysis.

5.3. Management of strategic measures (MSM)

SIA « MMS» includes the following functional modules:

Table 2 Description of the functional requirements of the MMS module

IDENTIFIER	DESCRIPTION OF FUNCTIONAL REQUIREMENTS
FR2.0	**The „Management of strategic measures" module shall provide user management features**
FR2.0.1	The «Administration» module is based on SITA management tools and must allow the management of roles and rights according to the features specified in the «MMS» Module.
FR2.1	**The «Strategic Measures Planning» Module**
FR2.1.1	The elaboration of the annual Strategic Plan drafted by ASV (the strategic plan includes the preventive procedures – vaccinations, re-vaccinations, serum tests, sampling and laboratory tests- monitoring the epidemic status and the quality of preventive measures)
FR2.1.2	Generating the data required to draft the annual plan for the management year by the system.
FR2.1.3	Calendar scheduling.
FR2.1.4	Appointing responsible persons for the elaboration of the strategic plan. The responsible persons shall be selected through a contest and shall be contracted by the authority allocating the service supply area.
FR2.1.5	Statistical and analytical analysis of the plan
FR2.2	**« MMS» Management**
FR2.2.1	Registering the preparation stages.

IDENTIFIER	DESCRIPTION OF FUNCTIONAL REQUIREMENTS
FR2.2.2	Registering the measures fulfilled;
FR2.2.3	Registering repeated measures
FR2.2.4	Registering the final results.
FR2.2.5	Closing the scheduled stages for the registration period.
FR2.3	**«Management of drugs and biological materials »**
FR2.3.1	Planning the requirements according to the Strategic Plan;
FR2.4	**Reports**
FR2.4.1	Comparison report of the percentage for the fulfilment of the strategic plan – ASV level the Sanitary veterinary Monitoring Department; DSVR level the livestock health department; CSV level, MVLP level.
FR2.4.2	Each user shall have access to the report according to the monitoring skill level.
FR2.4.3	Biological item stocks – ASV level (acquisitions planning) is generated at the department responsible for the acquisition and management of biological items based on the stocks of the responsible authority and of the supplier stocks;
FR2.4.4	Biological items stocks – DSVR level, the deduction percentage is generated by the responsible department with the management of the biological items at DSVR level;
FR2.4.5	Statistical and analytical analysis during the fulfilment of the Strategic Plan process.
FR2.4.6	Final report for the fulfilment of the Strategic Plan.

5.3.1. The Creation of the annual Strategic Plan by ASV

The elaboration of the annual Strategic Plan is based on the strategic Program for the country which includes the preventive procedures – vaccinations, re-vaccinations, allergic and serum tests based on monitoring and analysis of the epidemic status (records in SIA SARBTA) and of the quality of preventive measures for the previous year and based on the risk analysis.

The responsible authority drafts the SCHEDULE with the strategic surveillance, prophylaxis and disease prevention, animal-human transmission and environment protection actions based on the applicable legislation and on the national strategy in that field .

The MMS must ensure the management in the IT system of the strategic measures as records (creation, modification, view) in order to establish the Strategic plan for each of the basic parameters:

- Disease
- Species
- gender
- Age
- Type of strategic measures

The strategic plan includes the following basic actions:

- monitoring – collection, analysis, interpretation and systematic reporting of the data regarding livestock health;
- specific monitoring - monitoring certain diseases or infections;
- passive monitoring – routine monitoring, usually carried out through a general medical examination using simple examination methods (inspections, palpation, thermometers) for the visualization of animals in the farm, the information and notifications of the farmer (history), with the purpose of tracking a population of animals and the registration of data and documents with a possible epidemic meaning, in order to early detect diseases, to maintain or change the health status of the farm as a result of a disease or in order to certify livestock transfers or of the products from them; Also, the passive monitoring represents the clinical examination of the ill animals from a population considered free of diseases until that moment;
- active monitoring – any activity with a preset frequency and intensity, which has the purpose of establishing the presence of absence of a certain disease; also, active monitoring represents sampling, including examinations on dead bodies, on the samples from a population
- Clinically OK;
- Disease management – all individual or group measures taken for diseases which evolve in livestock populations;
- Preventing livestock diseases – activities destined to protect livestock or people in case of contagious diseases, present or potential risks and on their negative consequences.

At this MMS planning stage the list with the diseases included in the country strategic program shall be created. For each selected disease the appropriate species and the necessary actions are preset according to the applicable regulations in the field.

5.3.2. Generating data for planning

Based on the strategic plan in the country from SITA, the data regarding the effective number of animals subjected to the actions I the strategic measures, shall be acquired.

The plan must be detailed for each district, cities, diseases and species, gender, age category. The detailed plan can include the ear tag code, as a target animal of the considered strategic action. The plan is manually managed by the user through the introduction/modification of information.

Each responsible person in the field (DSVR official medic) must have the possibility of validating the overall plan generated by the centre and the possibility to correction in case of animals which are no longer a part of the farm. The validation is manual and is included in the basic functions regarding the addition and modification of records.

5.3.3. Calendar planning

The DSVR official medic, based on the data acquired in the previous stage shall carry out the calendar planning for each month of the management year.

Planning is carried out for each disease according to the appropriate regulations. The amount of scheduled actions is based on the effective number of livestock subjected to the measures scheduled for the respective period. The official medic of DSVR has the possibility of establishing the amount of actions scheduled resulted from various reasons (new born livestock, export/import, season in/out flows and others).

DSSV operation (central level) must provide the possibility of viewing the planning for each region and to approve the final version. The approval of the planning is made manually and includes the basic features regarding the addition and modification of records.

The data in the district calendar plans are reflected in the general country plan.

The persons responsible to carry out the strategic measures are selected from the list with contractors for the responsible authority in that respective area.

The activities in the strategic plan are distributed according to the calendar schedule based on the selection criteria based on various compliance factors according to the Strategic Actions Schedule for the respective year.

The final version of the strategic measures calendar with the respective parameters is published in the system and can be viewed by the authorized system users.

5.3.4. Appointing responsible persons

MMS shall ensure the registration of MVLP contracted in the system for subsequent management of the schedule execution and of the use of biological materials.

The following data shall be registered in MMS:

- Name
- Surname
- IDNP
- Address
- Contacts
- Contract No.
- Contracting period
- Responsibility area

The DSVR medic must distribute the strategic measures plan for all MVLP in the responsible area. Resulted from the fact that not all MVLP can have access to MMS, it is necessary to ensure the possibility of extracting the activities schedule for each MVLP in a printed format.

5.3.5. Statistical and analytical analysis of the Plan

All responsible persons on the field and at the central level must have the possibility of carrying out statistical and analytical analysis for the strategic measures scheduled based on the following criteria:

- Measures scheduled each month (number of activities scheduled) – measures carried out each month.
- Distribution of disease / livestock registered in SITA included in the plan / activities – new livestock detected on the farms when carrying out strategic measures.
- Livestock included in the plan in each area at various periods in time.
- Etc.

5.3.6. « MMS Management»

Entails the manual registration of information regarding the activities carried out in order to manage the strategic measures:

Recording the preparation stages.

Extraction from the SITA DB of the data required for the livestock, history of previous strategic measures, results of tests and monitoring the quality of supply of the strategic measures.

The veterinary during the preparation stage must have the possibility of extracting the data required to carry out the works:

- Farm data.
- The registry with the livestock included in the scheduled measures.
- The documents afferent to the strategic measures which shall be signed by the livestock owner and the MVLP – supplier (Accompanying Notification, Supply Document).
- The afferent documents are numbered in the system through a unique code. All subsequent actions are related to the unique number of the initial document.

Throughout the execution of the respective measures the user can manually update the status of the documents from the current stage:

- Scheduled (during the scheduling phase).
- Executed (after the registration of the performance data).
- In Progress (when a re-verification or laboratory tests are required).
- Repeated (when the measures must be repeated).
- Closed (the final results are input).
- Eliminated.

The format and the content of the afferent documents shall be approved by the internal regulations of DSSV for the execution of Strategic Measures.

MVLP which does not have access to MMS shall address the Official DSVR medic to print the necessary documents.

The printed document includes the “In progress” status. The number of the document is registered in MMS and cannot be modified. The printed version of the document must include the printing timestamp (planning).

The afferent documents are created in MMS and printed for each farm and the respective document must include a section where new animals can be included, along with sections for the executor (MVLP, official doctor) and owner/livestock owner signatures to confirm the execution of the respective measures.

5.3.7. Registering the executed measures

The executed measures are specified in the afferent documents signed by the executor and by the owner/livestock owner.

Data regarding the measures are input in MMS by the official doctor or by the SITA auditor at DSVR or mandate level – by MVLP (when they have access to MMS).

The execution file in electronic format includes both data regarding the actions carried out and the data regarding subsequent actions: re-verifications, re-vaccination, etc.

The user has the possibility of manually updating the status of the document in “Executed”. The execution date and the repeated verification date (if required) shall be specified in this document.

The executor must be aware of the wide document selection and filtering possibility through various document parameters:

- Disease /activity
- Status
- Schedule date
- Execution date
- Repeated verification date
- Responsible (for district and central level).

5.3.8. Registering results

The results of the laboratory investigations are manually input in the system.

Each of the official doctors of CSV, DSVR can view the information with the status of the won samples subjected to the examinations and with the results of the published analysis.

When the results of the laboratory investigations are carried out on stages (for various types of investigations), the intermediate results are also published in the system through the manual input of the data.

5.3.9. Reports

The ASV operator has access to statistical reports in CSV, DSVR, based on the amount of samples (positive), diseases and time periods.

The CSV, DSVR, PCSV, CRDV, LRDV, ASV operators have access to statistical reports based on the amount of samples (positive) in the diseases section and the time interval for the respective areas (for which they are responsible) in relation to the strategically plan.

5.3.10. Recording repeated measures

Whenever required to fulfil the scheduling and execution procedure shall be fulfilled again with the additional notification (repeated). The registration of the repeated measures within the fulfilled measures including the results of the laboratory tests shall be carried out according to the general procedure with a “repeated” remark

5.3.11. Registering the final results

The registration of the final result means the finalization of the Accompanying Notification or o the Execution Documents through the establishment of the results of the respective action and by modifying the status of the respective document to “Closed”. The operation is carried out through the manual update of the specific information.

5.3.12. Closing the scheduled stages for the management period

At the end of the period established for the actions in the Strategic plan within the deadlines established by ASV, the records regarding the measures fulfilled for the previous period shall be restricted. They shall be applied at the end of the scheduled period of the management year in order to obtain statistical and analytic reports for the previous period.

It can also be applied each quarter to ensure the input of data on time and to ensure the generation of correct intermediate reports (quarterly).

All unfinished stages from the previous plan shall be transferred to the subsequent period with the appropriate “not run” status. The operations are carried out through the manual update of the specific information.

5.3.13. «Management of drugs and biological materials »

Requirements planning according to the approved Strategic Plan;

Requirements planning is ensured through the introduction of the respective positions from the drugs registry and of the use regulation and through the calculation of the respective amounts required for the scheduled activities as a result of the manual data input in the system.

Based on this planning ASV can generate a central report and regardless of the IT system it shall ensure the acquisition of the necessary drugs and biological materials.

5.3.14. The MMS Report Module

The MMS report module must provide statistical and analytical reports for each executions stage according to the Strategic Plan:

- Comparative report of the fulfilment percentage of the strategic plan – ASV level the Sanitary veterinary Monitoring Department; DSVR level the livestock health level; CSV level, MVLP level.
- Biological products stocks – ASV level (acquisitions planning) are generated at the responsible biological products acquisitions and management department based on the stocks at the responsible authority and on the supplier stocks
- Biological products stocks –DSVR level the deduction percentage is generated by the department responsible with the management of biological products at DSVR level, ;
- Final report for the fulfilment of the Strategic Plan.

The comparison report of the fulfilment percentage of the strategic plan for all areas and for each parameter must be provided.

- Disease
- Species
- Strategic measures

Each use shall have access to the report according to the monitoring responsibility level.

5.4. GIS Systems of SIA SITA

GIS technologies for SIA SITA and SARBTA will support decision making for supervising the epidemiological situations and will be used as a geographic visualization tool for SITA. The system will have the possibility of positioning the SITA sites, and visualizing the animal species concentrations, animal transit on some locations, etc. The system will initially be constructed as a pilot project for a region, to enable fine adjustments to the final scope. The system will allow setting barrier zones (for example at 3 km, 7 km, 11 km) for suspect diseases and to visualize the sites inside the zones including information like number of animals, species, and animal holders. This system will integrate with SIA MSM to allow visualization of geographical information for strategy planning and measures. The system will allow historical data display for disease sources and will display reports with analytical analysis of this data. The system will allow identifying the root cause of infections and to allow decision makers to analyze the risks and avoid similar situations in the future.

GIS component for SIA SITA has to include three key-systems:

1. **Alert System**

This system will answer to such questions as:

- Localization geographically, by specialists the animal's disease alert
- The automatic creation of three protected areas (area 1, 2 and 3 (structured by reports) with next queries:
  - Sick animals, suspected animals, endangered animals, dead animals
  - Sort animals by species,
  - Number of animals form these areas

- Number of animal's owners

2. Monitoring and management of livestock in localities

- Collecting information about livestock and health of animals to the central server and central geodatabase
- Report of animal migration from one place to another with indicators on the GIS map about this migration
- Creation of geo-databases with the coordinate system allowing mapping visualization options, including the following:
- Holdings and their type
- Information about owners
- Number and species of animals
- Districts and localities

3. Tracking of vaccination process

Mapping of vaccination segment and possibility to create buffer zone (with different distance) from this segment

Geodatabase Management

GIS component has to manage geodata in a variety of database management systems. Data can be stored in a central database and support the concurrent multiuser editing necessary for many data management workflows; ability to create and load spatial data into geodatabases. The system will support the database included in the solution.

GIS component has to allow sharing of spatial data and functionality through the use of Web services. Web services make it easy to share the use of resources across client applications, including Desktop Software, Web mapping applications, and mobile devices.

Application developers have to have possibility to build custom Web mapping applications using application programming interfaces (APIs).

5.4.1. Administration Tools

GIS component will include registration into system via user and password. These components will be organized in "Roles", and each role will have own rights and accessibility to geodata and maps.

5.5. Administration and Configuration System

The system administration module includes the following functionalities:

- Managing users and roles ;
- Classification management ;

5.5.1. Managing users and roles;

To ensure controlled access to the system and protect it against intentional or accidental unauthorized access to the data it stores, a security system will be implemented which aims to limit the actions performed by users of the application to those established by policy rights set by the system administrator.

The security system is flexible, allowing a various range of permissions to be implemented for the users of the application.

The security system has the following feature:

- Ensures the security of all the systems interfaces, preventing unauthorized end-user access to the system ;

In the front-end applications rights will be granted through roles and permissions granted to these roles.

The secure authentication system is based on the principle of sole connection. Each end-user accessing the system is identified by a unique username and a password.

The security module ensures the minimum of functionalities which can be viewed below:

- Create a new user account ;
- Delete a new user account ;
- Edit an user account ;
- Create roles
- Delete roles
- Grant system rights to roles;
- Withdraw system rights to roles;
- Assign roles to a user account ;
- Withdraw roles to a user account ;

The variety of rights available in the system is structured in a way that makes the security system to be reliable and flexible. Each user can be given more roles, as a single user may need to access more than one set of information and more than one module of the application.

There are two types of users that will use the system:

- Administrators – they will configure the system; will define and implement the security policies (access rights); will manage operations that will automatically run within the system;
- Operators – they will have access to the system according to user-defined rules set by the system administrators; they will implement the business models.

The system operators will have a „USER" and a „PASSWORD" that will allow them access into the application. Depending on the role associated to each „USER", operators will have access to certain modules and options in the application.

Tables of users and their related roles will be divided into organizational units and subunits.

Users that are registered under one organizational unit (central level) will have visualization and administration access to the data introduced by the users registered in the organizational subunits (part of the central level organizational unit). Organizational subunits are hierarchy divided on several levels. The Upper Levels will be able to access the Lower Level information.

5.5.2. Access to the application

Access to the system will be conducted in a secure mode through a user name (USER) and password. System security will be achieved through user-level encrypted passwords.

Users will access the system. It will display the login screen for user authentication. Login screen will display the items „USER" with „PASSWORD" and „CONNECT button"

Within the fields „USER" and „PASSWORD" the user will fill in the credentials set by the system administrator. The „USER" field will display the user's entered name. Upon introducing the password within the „PASSWORD" field, star characters („*") will be displayed instead of the password in order to maintain its confidentiality.

After filling in the „USER" and „PASSWORD" fields the user will click the „CONNECT" button.

If the data entered in the „USER" and „PASSWORD" fields are found within the system security tables and they have a role associated, the application will display the „Main Menu" screen. The

application „Menu” contains only the features that the role of the user has access to. On each screen from the application there will be an un-editable field which contains the logged „USER’s” initials.

If the data entered in the „USER” or/and „PASSWORD” fields are not in the system security tables, upon accessing the „CONNECT” button the application will display a message box in which the user is informed that the username or password have not been entered correctly.

5.5.3. System access management

- Access to users can be limited to certain modules and applications based on their role within the organization.
- If necessary, certain users may have their access to the application banned by „Account Deactivation”.

5.5.4. User management

This feature allows the users with system administrator roles to define system users. The user management module provides the following features:

- Search users;
- View user;
- Add user;
- Associate user role;
- Modify user;
- Delete user.

User search: With this functionality, system administrators can identify a user by using selection filters. Users can be identified by: „User”, „Name” and „First name”.
Viewing a user: Through this functionality, data identifying a selected user can be viewed.
Add User: To add a user, the system administrator will access the „Add user” screen which contains the following editable fields:

- User (Username with which the user will log into the system);
- Full name
- Organizational unit (the organizational unit is selected to which the user has access to by selecting the organizational unit classification);
- Utilization manager
- The period of validity.

The system users are defined by organizational units to determine the levels of access within the system: central level /regional level.

Add/Withdraw a user role: Through this functionality, the system administrator assigns users roles or delete selected roles from that user.

Delete user: Through this functionality, the system administrator will be able to delete a selected user. A user can be deleted if he has not carried out any activities in the application.

5.5.5. Role management

This functionality allows system administrators to define user roles and which users are on each role.

Role management module provides the following features:

- Search a role;
- View role;
- Add role;
- Add / withdraw rights to a role;
- Modify role;

- Delete role.

Search role: Through this functionality, administrators can identify a role registered in the system by using selection filters. Roles can be identified by: „Name" and „Description".

View role: Through this functionality, administrators can view a selected role and the rights assigned to that role.

Add role: Through this functionality, administrators can define a new role in the application. The information that needs to be completed in order to add a role in the application is: „Role name", „Role description" and "The period of validity".

Add/Withdraw rights to a role. Through this functionality, administrators assign rights to the role selected or deleted rights from the role selected. The list of rights is defined in the design phase of the architecture of the system and implemented in the system so that the menu structure that is accessed by the operator is limited by the rights attributed to the assigned role.

Two categories of rights are defined in the system:

- Access rights to system menus;

Ex: FILE Menu; Classification menu; Eligibility conditions block menu

- Functional rights in the system;

Ex: Add file; Delete file; Modify file.

System users will be able to access only the files (applications, documents) that belong to the organizational unit the user belongs to. Users who belong to higher organizational units can access both the organizational unit in question and documents belonging to subordinate organizational units.

Role modification: Through this functionality, administrators can modify a selected role.

Delete role: Through this functionality, administrators can delete a selected role. A role can be deleted if not assigned to any user.

The system Users' roles

Role	SITA	MMS	IC
Administrator (SE "Animal Register")	Administration of users Status of the system Administration of registers Audit of users' actions Audit of data security Completion of classifiers		
Auditor SE "Animal Register" (central level)		Internal audit	Internal audit
Territorial Auditor SITA		Registering of Strategic Measures when economic agents and MVLP do not have system access. Print documents from MS for MVLP (accompanying notes, provider notes)	
Public servant from SVSD (central level)	Extraction of reports	Introduction of Strategic Measures on the republican level (first planning stage) Planning of needed medicines Registration of available medicines (purchased) Control on fulfilment Extraction of reports	Planning of inspection on republican level Appointment of responsible persons Control on fulfilment Extraction of reports
Official veterinary doctor for animal health RSVD (regional level)		Registration of contracted PVD Planning of Strategic Measures (calendar plan) and distribution of the plan per responsible persons (MVLP registered in the system) Registration regarding receipt of the documents for evidence	Planning of inspection on the regional level Printing of related documents (Holding Card, Inspection Note, Minutes, etc.) Registration on paper of carried out inspections Completion of data for registered

		Registration of the distribution of the medicines for contracted VD Printing MS related documents for PVD (Accompanying Note, Service Providing Act) (status of the sample, scanned file)	Inspections and proper modification of their status Extraction of reports
SVC Official veterinary Doctor		Receipt of testing results of the samples sent to laboratory within MS (status of the sample, scanned file)	Print of accompanying documents (holding documentation, inspection notes, minutes) Registering of data for registered inspections and modifying the corresponding status Extract reports
PVD		Printing of MS related documents for PVD (Accompanying Note, Service Providing Act) Registration on paper of fulfilled MS Receipt of testing results of the samples (status of the sample, scanned file)	
VD employed by BO		Printing of MS related documents for PVD (Accompanying Note, Service Providing Act) Registration on paper of fulfilled MS Receiving testing results of probes (probe status, scanned file)	
RCVD operator (LRDV)	Registration of samples received for testing Registration of results	Registration of samples received for testing Registration of testing results	

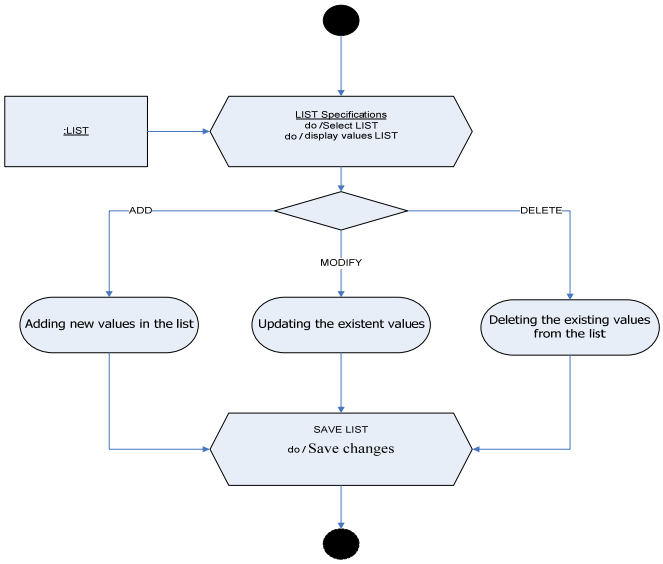
5.5.6. Classification management

The classification module is managed by the system administrator with specific rights.

Classification management requires management of the classification content defined in the system through the following operations:

- Adding new values in the classification
- search value in classification
- updating existing values
- deleting existing values from the classification;

5.5.7. Activities diagram



1. Main scenario description:
Step 1: Select from the list of catalogues classification
Step 2: Search a registration from the classification
Step 3: Add a new registration in the classification
Step 4: Saving the changes made
2. Description of alternative scenarios
Step 3: Updating an existing record in the classification
Step 3: Deleting an existing registration
If a recording of nomenclature is already used it will not be removed from classification.

5.5.8. List of classifications identified

1. Organizational units;
2. Users;
3. Roles;
4. Citizenships;
5. Localities;
6. Rayon;
7. Countries;
8. Banks;
9. Legal form of organization

5.6. Project activities

All global activities related to expected results, requirements towards bidders and maximum terms for the execution of activities are represented in the table below.

Nr.	PERFORMED ACTIVITIES	EXPECTED RESULTS
	Phase I. Preliminary analysis of the project	
1.	***1.1. Analysis of legal restrictions*** on which basis the system will be developed ***1.2. Analysis of the database*** of SITA informational system regarding the pilot for implementation of the Inspection and Control ***1.3. Delimitation of functional requirements regarding new functional modules*** ***1.4. Documentation on proper security rights of users:*** security policy for each group of users will be defined; access and data manipulation rights, as well as access by the users to interface will be mentioned separately for each group of users ***1.5. Delimitation of the main project phases*** and determination of deadline for their fulfilment. **Approximate duration:** 1 month	**Result 1:** Delimitation of the main principles for development and functioning of the system **Result 2:** Drafting of the document "*Business Processes Analysis*", containing detailed information of the business processes, on all component of the informational system and their interaction, administrator and user interface, users and their roles, . **Result 3**: establishment of the main project phases and their fulfillment schedule
	Phase II. Development of the system	
2.	***2.1. Development of Farmer Registry System:*** will comprise all activities related to design and development of Farmer Registry system. ***2.2. Integration of Farmer Registry System with Animal Register System:*** will comprise all activities related to the integration activities of Farmer Registry system. ***2.3. Integration of Farmer Registry System with General Agricultural Census:*** will comprise all activities related to the integration activities of Farmer Registry system.	**Result 4**: Development, installation and configuration of Farmer Registry system **Result 5**: Development, installation and configuration of integration with Animal Register System **Result 6**: Development, installation and configuration of integration with General Agricultural Census **Result 7**: Development, installation and configuration of the pilot for SIA

Nr.	PERFORMED ACTIVITIES	EXPECTED RESULTS
	2.4. Development of SIA modules: will comprise all activities related to design and development of the functional pilot for and Inspections and Control. SITA existing functionality should be taken into account in the process of elaboration of the pilot. ***2.5. Configuration of the system and access rights:*** configuration activities should be carried out. Main compartments of the system should be configured and defined (standard work flows, used registers, document's templates, groups of users, etc.). ***2.6. Drafting project documents:*** administrators' and users' guidelines for the informational system should be elaborated. ***2.7. Operation in testing regime***: it should be performed on a selected group of users with different access levels. **Approximate duration**: 8 weeks, from which 2 weeks – operation in testing regime	**Result 8**: Operation of *system modules* in testing regime **Result 9**: Operation of *pilot* in testing regime **Result 10**: Delivery of project documents (user's guidelines, administrator's guidelines)
	Phase III. Training of trainers	
3.	***3.1. Training of administrators.*** system administrator should be trained in the field of administration of the system ***3.3. Training of Trainers.*** Trainers for further trainings of users should be trained **Approximate duration**: 3 days	**Result 11**: Training material for administrator **Result 12**: Training of the system **Result 13**: Training of maximum 4 trainers
	Phase IV. Guarantee	
4.	***4.1. Technical assistance in use for the testing period.*** Technical staff of the bidder will actively support the users for a period of 1 week	**Result 14**: Correction of eventual programming errors **Approximate duration**: will be carried out together with activities

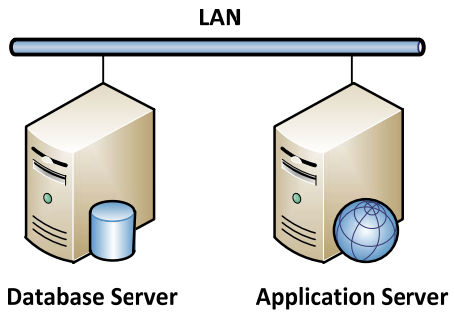
Nr.	PERFORMED ACTIVITIES	EXPECTED RESULTS
	4.2. Quality guarantee in the process of exploitation and use after the system is launched: after fulfilling activities of phase III, the bidder will provide technical guarantee services in the process of implementation and operation.	related to II and III phase + 1 year after these phases are finished

Handover will be carried out in 2 phases:
Handover during implementation period: minutes of stage handover will be signed at the end of each work stage. Handover of modules per stages is accepted.
Final handover: when for all phases minutes of stage handover are signed (activity stages 1-3), and when possible technical problems are sorted out, in this case Minutes of handover for work completion will be signed (final handover).

6. Technological Description of the Information System

6.1. Architecture

The technical architecture is illustrated below:



The infrastructure is described in the following chapters.

6.2. Hardware infrastructure

The system will run on a hardware infrastructure consisting of 1 Dell PowerEdge R410 server that was previously acquired by the beneficiary. The server has the following specifications:

Architecture	x86 server mounted in rack 1U with 2 processor sockets
Installed processors	2 processors Intel® Xeon® E5506, 2.13Mhz, L2 12MB, 4.80GT/s
RAM	8 GB RAM DDR3 1333 MHz
LAN connectivity	Dual Port Gigabit Ethernet Controller
Expansion slots	1 free slot: 1 PCIe x 16 (True x16, Gen2)
Storage Sub-system	integrated RAID controller with 6Gb/s and RAID 0, 1 and 10 4 HDD units 3,5”
HDD	2x146GB, SAS 3Gbps, 3.5-in, 15K rpm Hard Drive
Optical unit	DVD-ROM
Interfaces	Front panel: 2x USB, 1x Video Back panel: 2x USB, 1x Video, 2x Gigabit NIC, 1x Serial
Power supply	1 x power source non hot plug, 80% efficiency Power source: 100-127V and 200-240V with automatic adjustment Frequency: 50-60 Hz
Functioning parameters	Maximum active power: 480W Maximum current: 7,5A @ 100V, 3,58 @ 240V Maximum heat: 10° - 35°C Power with completely configured system: 20% - 80%

6.3. Software infrastructure

6.3.1. Database

The database must have the following specifications:

- Must be a relational database management system (RDBMS)
- Possibility to run on 64 bit processor architecture
- Run on multiple platforms (such as Windows, Linux, UNIX)
- Possibility to store data using transactional properties with full ACID guarantee
- Support transactions
- Assure transaction isolation levels as defined by ANSI SQL
- Support for triggers and stored procedures
- Support for numeric data types and character data types as defined by ANSI SQL
- Possibility to automatically save and restore data
- Complex search in text fields, using specialized indexes for rapid search in this type of data
- Possibility to store large amount of data with transactional integrity
- Allow native storage and management of XML data structures
- To allow executing SELECT, INSERT, UPDATE and DELETE operations
- Allow inserting data in multiple tables using a single insert operation
- Should allow star-join query optimizations for join operations between a fact table and dimension tables
- Allow defining index tables for fast access to particular tables, with the possibility to store the index tables in the same physical block
- Possibility to define indexes for rapid data access
- Allow database pooling
- Support for regular expressions and search patterns
- To support recovery of running transaction if the transaction is stopped or interrupted

- Should allow querying data at some point in time in the past. Should allow logically reconstructing corrupted data that may have been deleted or changed inadvertently.
- Support for UTF-8
- Support for data replication between two database instances
- Should allow stored procedures to be written in the native database language as well as an enterprise object oriented language such as Java or c# .NET
- Allow access control to database at database object level
- Allow native mechanisms to restrict user access
- Should allow the possibility to encrypt data stored in tables
- Allow save/restore and archive data allowing the database to remain online
- Should allow to run scheduled backup processes automatically from a centralized and easy to administer way
- Allow the database to run on a clustered platform if it is necessary to extend the current architecture to allow system high availability
- The database stored data must not be limited

6.3.2. Application Server

The application server should be an enterprise-class platform that allows building complex applications using an enterprise class framework. The application server should satisfy the following requirements:

- Compatibility with Enterprise Java Beans (EJB) 3.0 or equivalent technologies
- Possibility to use Dependency Injection
- Possibility to use Annotations for
- Possibility to use plain old java or CLR objects (POJO or POCO)
- Support for JSP or ASP.NET for writing web applications
- Possibility to use a web application framework such as Java Server Faces for developing rich user interfaces
- Native integration with an web server like Apache web server or similar
- Interoperability using remote method invocation and remote procedure call methods
- Possibility to expose enterprise objects as stateless web services
- Possibility to send and receive messages using web services
- Support for standard naming and directory interfaces
- Support for application level transactions (two phase commit transactions)
- O/R mapping and persistence
- API for data persistence
- Support for O/R mapping between single object and multiple tables
- Possibility to override O/R mappings with hand written SQL
- Ability to implement web services
- Compatibility with SOAP, WSDL, UDDI, and XML for full web services support
- Access to database using API like JDBC or ODBC
- Support for clustering (including fail-over and load balancing)
- Support for caching
- Support for queue messaging services (like JMS, WCF)
- Support for authentication and authorization services

7. Delivered results

Farmer Registry and Extension Information System should be mandatory accompanied by the following deliverables and services:

- Development, configuration and installation of the FREIS functional modules;
- The document "FREIS Technical Project", containing detailed information of the architecture of solution, conceptual and physical model of data, all components of the informational system and their interaction, users and their roles, principles to ensure informational security;
- The document "FREIS Business Processes Analysis", containing detailed information of the system business process;
- Administrator's guidelines;
- User's guidelines;
- Graphic plan for project implementation;
- Training documents;
- Training of trainers and administrators;
- Post implementation guarantee.

8. Information security

Informational security concerning the system will include all legal, organizational, economic and technologic measures, oriented towards prevention of risks related to security of informational resources and infrastructure.
Informational security entity operates with the following main categories:

- Informational risk;
- Objects of informational risk;
- Sources of informational risk;
- Methods to achieve informational security threats;
- Informational security issues;
- Mechanisms to ensure informational security.

The following issues related to informational security faced by the designed informational system must be underlined:

- informational confidentiality (prevention of obtaining information by people with no rights of competences);
- logical integrity of information (prevention of introduction, updating and unauthorized cancellation of information or introduction of denatured data);
- ensuring informational infrastructure security against attempts to damage or modify its functionality.

Users will have distinct access rights depending on their security level. For each access group must exist the possibility to define the roles and the rights of the users (even for the level of interface available for users).
Access to the database information has to be limited depending on specific rights and roles of the access groups. In this case, each group of users will have a different interface for the visualization and management of database information, as well as manipulation with data.

At the physical level, security must be ensured through an automatic model for generation of reserve copies from the database. The beneficiary must have the possibility to define its own policy for the automatic generation of reserve copies from the database.

Informational security must be ensured on the entire chain of the functioning of informational system and needs to be improved when new risks appear.

9. Testing and quality assurance

9.1. Preliminary tests

The beneficiary will run together with the supplier tests of each delivered component according with usage and installation documentation. The success criterion is passing each component test. After installing the delivered components and running the preliminary tests an installation acceptance will be signed out.

9.2. Operational tests

The beneficiary will run together with the supplier tests of the integrated system as detailed in the test plan delivered by the supplier and agreed by the beneficiary. The test will verify that the system pass all the functional tests and handle data consistency, time constraints, data validation and error management. The success criterion is passing all the functional tests.

The high level test plan must be delivered by the bidder included in the offer. The detailed test plan will be built by the winning bidder and approved by the beneficiary during project implementation.

10. Project implementation

The following activities shall be carried out for the system implementation:

10.1. Analysis

During the analysis process, in order to determine the system operational requirements, the bidder must carry out discussions with the IT personnel and/or designated experts from the beneficiary. The bidder shall generate a report with the conclusions of the discussions which contains the detailed technical and functional specifications of the system. The analysis shall include:

- Detailed analysis of the functional requirements
- Analysis of non-functional requirements

10.2. Design

The main objective of this phase is the detailed design of the solution. The existing system shall be analysed in order to identify the critical use cases and the basic operating scenarios which shall have a significant impact on the design of the application. The potential risks are highlighted and generic solution architecture is generated.

The system model shall be detailed by identifying the solutions required for its implementation. For this purpose, the functional behaviour of the application and the features which must be developed shall be defined in detail, the gaps, contradictions and incorrect or unclear requirements shall be identified. The application business logic is identified and formalized in detail and the detailed level architecture is defined. The test plan specifications are drafted. The design shall include:

- Functional architecture
- Technical architecture
- Informational model
- Detailed design
- Test plan draft

10.3. Development

The bidder must have the ability to develop a solution based on the results of the analysis and design processes. The design shall include:

- The development of the solution components
- Unit testing of the solution components

10.4. Implementation

The bidder must ensure the installation, configuration and commissioning of all system components, with appropriate human resources, as follows:

- Installation and configuration of standard SW
- Integration of specific SW

10.5. System documentation

The bidder must create the following deliverables which document the system:

- Online help system.
- User's manuals for all solution components.
- Source code of non-COTS components (not applicable for Commercial Of The Shelf software and system)
- System acceptance and validation tests
- System operations manual which includes the following procedures:
- Installation
- Start
- Stop
- Back-up
- Restore
- Monitoring
- Upgrade
- Users administration/management

10.6. Acceptance testing

The bidder must provide the beneficiary with a system functional and operational testing procedure by drafting acceptance test plans and test cases for all system modules, according to the specifications. The acceptance testing shall be carried out by the CNAS team based on the acceptance test plan.

10.7. Training

The final purpose of this component is that all system users are capable to use the system every day and that at the end of the project they shall be able to use it and manage it.

For the optimal execution of the activities required to use and manage the system it is very important that trained personnel is available. For this purpose, a training session shall be organized using train-the-trainer method during which maximum 4 trainers will be trained over 2 days. Also 2 system administrators will be trained over 2 days.

The training shall be carried out considering the following:

- Product training shall be in Moldavian;
- The training for the system maintenance personnel shall be carried out by the system development/implementation team;
- Attendance certificates shall be issued for all courses.

10.8. Methodology

The supplier shall have a methodological approach on the entire implementation process and shall describe the methods used to track the project performance.

The implementation methodology presented shall include:

- The overall framework proposed for the implementation of the contract;
- The work methodology for the proposed activities

The project shall go through at least the following stages:

- Analysing the existing situation and documenting the detailed specifications and the use cases
- System design
- System development
- System implementation
- Monitoring and controlling the project performance
- Implementation testing
- Personnel training

10.9. Offer structure

The offers shall be structured so as to include the following:

Basics

- Own vision on the project performance.
- Opinions on the main details of the project which can influence the achievement of the objectives and of the expected results.
- Numbering and description of the risks and hypothesis regarding the performance of the project.
- Identifying new risks and hypotheses
- Identifying risk prevention and mitigation solutions.

10.10. Project strategy

a. Methodologies:

- The bidder shall detail the IT system development methodology used.
- The bidder shall detail the project management methodology used. An international methodology must be used.
- The bidders shall present briefly the methodologies used in the project.

b. Solution proposed:

- The bidders shall present the solution proposed for the project, in order to reach the objectives and the expected results.
- The solution description must highlight the project stages, the specific activities for each stage, the deliverables expected from each stage, the way they concur to reach the objectives.
- Listing the project inputs and outputs and the relations between them.

c. Project organization:

- The bidder shall present in detail, in the specific report along with the methodology proposed, the organization of the project. The proposed structure of the Project Management Team shall be presented.

- If the bidder represents an association, it must describe the role of each member of the association in the project, along with the distribution and interactions of the tasks and responsible persons.

10.11. Project Management Services

A full description of the PM methodology must be provided along with a preliminary project plan which will be used throughout the implementation project. The PM methodology must include at least the description of the procedures, the work instructions and the tools used. The methodology shall include at least the procedures which implement the following processes:

- Planning;
- Monitoring and control, including reporting;
- Project management;
- Risk management;
- Change management, including communications planning;
- Management of configurations, deliverables and software versions
- Incident management, including the escalation procedures
- Project quality assurance (planning, control, preventive and corrective actions, etc.)

The bidder shall present the planning of the activities proposed and the relation between them through a Gantt chart.

The chart must specify the milestones which must be fulfilled by the bidder in order to reach the objectives.

The bidder shall detail the resources allocated for each project stage, and activities considered as important.

10.11.1. Profiles

1. Project Manager

Minimum requirements:

- Bachelor degree in IT&C;
- At least 5 years relevant general experience in IT&C projects;
- Specific professional experience as Project Manager for IT&C projects demonstrated by presenting 2 previous IT&C projects from which at least one project shall contain all the following activities: Business and Technical Analysis (Requirements Engineering), system design, software development; Installation, configuration and commissioning services; Transfer of knowledge and training;
- Excellent knowledge of at least one international Project Management methodology - Project Management Professional - PMP, Projects IN Controlled Environments 2 - PRINCE2 or equivalent certification is required
- Good knowledge of at least one international framework for organizing and optimizing IT processes within organizations – ITIL Foundation Certificate or equivalent is required
- Excellent knowledge of at least one international methodology for Risk Management – Management of Risk M_o_R Practitioner, Risk Management Professional – RMP PMP Certificate or equivalent is required

2. Technical coordinator

Minimum requirements:

- Bachelor degree in IT&C;
- At least 5 years relevant general experience in IT&C projects;
- Specific professional experience in IT&C projects demonstrated by presenting 2 previous IT&C projects in which the expert was appointed for a similar position:
- Good knowledge of IT&C systems information security standards and methodologies - Certified Information Security Manager – CISM/Certified Information Systems Security Professional – CISSP or equivalent is required
- Excellent knowledge of at least one international methodology for system analysis and audit – Certified Information System Auditor – CISA Certification or equivalent is required
- Excellent knowledge of at least one international methodology for monitoring and evaluation of key performance indicators for IT&C systems - Control OBjectives for Information and related Technology – COBIT Certification or equivalent is required
- Excellent knowledge (expert level) of at least one international framework for organizing and optimizing IT processes within organizations - ITIL Expert Certificate or equivalent is required
- Excellent knowledge of at least one methodology in the field of governance of IT&C systems - Certified in the Governance of Enterprise IT – CGEIT Certificate or equivalent is required

- Good knowledge of at least one international Project Management methodology - Project Management Professional - PMP, Projects IN Controlled Environments 2 - PRINCE2 or equivalent certification is required.

3. IT System Architect

Minimum requirements:

- Bachelor degree in IT&C;
- At least 5 years relevant general experience in IT&C projects;
- Specific professional experience in IT&C projects demonstrated by presenting one previous IT&C project in which the expert was appointed for a similar position and the mentioned project contained at least all the following components: Software development services; Implementation services; Transfer of knowledge, training and acceptance testing;
- Excellent knowledge of at least one framework for enterprise architecture – TOGAF 8 Certificate or equivalent is required
- Excellent knowledge of software solutions and application development – certificates for developing applications and solutions issued by an international software producer are required

4. Business analyst expert

Minimum requirements:

- Bachelor degree in IT&C;
- At least 5 years relevant general experience in IT&C projects;
- Specific professional experience as Business Analyst for IT&C projects demonstrated by presenting 2 previous IT&C projects from which at least one project shall contain all the following activities: - Business and Technical Analysis (Requirements Engineering), system design, software development; Installation, configuration and commissioning services; Transfer of knowledge and training;
- Extensive business analysis experience - Certified Business Analysis Professional Certificate or equivalent is required

5. GIS Specialist

Minimum requirements:

- Bachelor degree;
- At least 5 years relevant general experience using GIS applications ;
- Specific professional experience as GIS Specialist for IT&C projects demonstrated by presenting 2 previous IT&C projects from which at least one project shall contain all the following activities: - Business and Technical Analysis (Requirements Engineering), system design, software development; Installation, configuration and commissioning services; Transfer of knowledge and training;
- Excellent knowledge of collection, editing and processing of GIS data – GIS Certifications are required

11. Guarantee

The bidder should include detailed information about the guarantee assurance, human resources that will be allocated and their qualification.

The following guaranty services are required:

- Software COTS included in the offer – 12 month from the delivery acceptance
- Integrated system – 12 months from the final acceptance

During the guaranty period the following services must be provided:

- Maintenance of the delivered system in the agreed upon parameters (performance, integrity, etc.)
- Resolve identified bugs that manifest during operation