DPSHTRR e-services Requirements Specification

Version 1.0

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1. Executive Summary

1.1 Project Overview

The purpose of this software is divided into 2 main parts:

1) To solve problems the majority of Tirana citizens have by providing automated services from DPSHTRR.
2) To help the DPSHTRR staff in:
    a) Processing services
    b) Management Part
    c) Communication between sectors.

DPSHTRR e-services is a software which aims to make it easier and less time consuming specific services that "Drejtoria e Përgjithshme e Shërbimit të Transportit Rrugor" offers to Tirana citizens. Everybody that has an account in this web application will have the opportunity to choose among several services. After choosing the desired service, a list of required documents will be shown. The client has to scan these documents and submit them in our web application. However, for the application to be complete, the client has to pay a certain fee. This fee can be paid either by bank or by credit Card. Now, the client has to wait until the employees on the other side check their documents. If the documents are accurate, then the status of the application will appear as "READY" and the client may go at the "DPSHTRR" office to pick up his service. Otherwise, the client will be informed about the missing/not accurate documents.

Our software will offer a wide specter of services that are provided by DPSHTRR and will select among all services the ones that are appropriate and fulfill all the criteria that is required by DPSHTRR structure and Albanian law. This software will come in help also to the employees of DPSHTRR in the manner of processing, management, communication and organization between different sectors of DPSHTRR. The modules of this software will be divided between sectors, where each sector has its own employees including the manager of that sector and the services that are provided by that specific sector.

The Graphic User Interface will be very easy in terms of usability, for both the citizens and the employees. The software will come in the format of a web application in which technologies like PHP, JavaScript, jQuery, AJAX, MySQL will be used.

1.2 Purpose and Scope of this Specification

The purpose of this document is to give a detailed description of the requirements for the "DPSHTRR e-services" software. It will illustrate the purpose and declaration for the development of system in different phases. It will also explain system constraints, interface and interactions with other external applications.

The DPSHTRR e-services Requirements Specifications document will have 3 major releases:

1. Version 1.0 which will behave as a draft version consisting in the first level of designing the software in terms of Executive Summary, Service Description and Requirements
2. Version 2.0 which will consist in a high-level designing framework of our software
3. Version 3.0 which focuses on detailing a low-level view of each component of the software and how the components interact with each other.

2. Product/Service Description

There will be general factors that will affect the product and its requirements such as:

1) People and Action
   - Developers
   - Users
   - Top management
   - Project Team
2) Development Processes
   - Requirements Determination
   - Project Management
   - User Participation
   - User Training
   - Management of change
3) Project Content
   - Project characteristics
   - Project scope, goals & objectives
   - Resources
   - Technology

2.1 Product Context

This product is independent and self-contained. It can behave as a one single platform but it has the feasibility to merge with the existing platforms or modules of DPSHTRR.

2.2 User Characteristics

DPSHTRR e-services will have different types of users according to their role

- Users from Drejtoria e Pergjithshme
- Users from Drejtoria e Regjistrimit, Licensimit, Certifikimit
- Users from Drejtoria e Drejtuesve te Mjeteve
- Users from Drejtoria Ekonomike
- Users from Drejtoria e Teknologjise dhe Informacionit(Admin)
- Clients

It is important to specify that:

- **Users under Drejtoria e Pergjithshme**, will have access in the records of all the other departments.

- **Drejtoria e Regjistrimit, Licensimit, Çertifikimit** will be divided into 2 sectors so there will be 2 subcategories of users in this department as listed below:
  i. Sektori i Regjistrimit te Mjeteve
  ii. Sektori i Licensimit dhe Certifikimit
  Users from the first sector can nor see neither process applications related to the other sector.

- **Drejtoria e Drejtuesve te Mjeteve** will be divided into 2 sectors so there will be 2 subcategories of users in this department as listed below:
  i. Sektori i drejtuesve te mjeteve
  ii. Sektori i kontrollit te autoshkollave
  First type of users will take care of services related to Individual Persons. The other one will process applications related to 'Autoshkolla Clients

- **Users from Drejtoria Ekonomike** will have the duty to check if the client has paid the fee for the certain application. They will change the application's status of payment to "Yes" only if the full fee is paid. Without the approve of the finance, an application will not be processed by the respective sector. They will also have access in all transactions and payrolls.

- **Users from Drejtoria e Teknologjise dhe Informacionit** will act as administrators. In other words, they will be in charge of creating users according to sectors. Every problem concerning the system will be their task.

- **Clients** will be classified of 2 types:
  i. Person Fizik - Every citizen of Albania will have the opportunity to register in the portal and create applications. By Application we mean request for a service. Once an account is created, a certain ID number will be generated to identify the user. The user cannot change the basic information such as Surname, ID number etc.

  ii. Autoshkolla - For these types of clients will be offered different type of services.

2.3 Assumptions

- A reliable internet connection is assumed to be available from both parts, the normal users(citizens) and the users that work for DPSHTRR.
- Minimum computer specifications to ensure the ability to run the basic software for most end users:
  - Processor – dual core @ 2.4 GHz (i3, i5 or i7 Intel processor or equivalent AMD)
  - RAM – 4GB
  - Hard Drive – 320GB 5400 RPM hard drive
  - Wireless (for lap tops) – WPA2 support required
  - Operating System – Windows 7, Apple OS X 10.11 or Ubuntu 10.10 (or equivalent Linux OS)
  - Backup Device – External hard drive or USB flash drive

- It is assumed that all actions through this platform are performed according to the law.
- It is assumed that “Programi I Transparences” according to “neni 7 te ligjit nr.199/2014 per Te drejten e Informimit” is public to all citizens of Albania from DPSHTRR official page.

2.4 Constraints

- Time constrain might force team members to compromise quality of the DPSHTRR e-services software.
- Stakeholders lack of cooperation might lead to project failure
- Server Specifications might lead to compromise in efficiency
- Labor Laws of Albania might lead into updating a module or the entire product
- A very high flux of users might affect the software quality in terms of performance

2.5 Dependencies

- Module of Services will depend on module of Structures of DPSHTRR
- In order to start processing the service, the user has to make the payment which will be confirmed by financial sector.
- In order to get a service, the user should sign up for the first time and prove his identity by one of the several options offered by the software.

3. Requirements

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_01	DPSHTRR e-services website	DPSHTRR e-services must have a website which everyone can access without registering in it. Different Categories such as Services offered, Procedures, Contact, Log in have to be displayed in it.	1		
FR_02	User Registration	The user must be able to register in the portal by providing: Passport Number/Personal Number, Name, Surname, Birthdate, Birthplace, Gender, e-mail address and password.	1		

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_03	Random Unique Number generated after registration	Once a user is registered in the portal, a random ID will be automatically generated. The user cannot change this unique number.	1		
FR_04	Basic information of the user cannot be changed after registration	After registering, user cannot change basic info such as Name/Surname, Birthdate and Birthplace. Other information like phone number, email, Zip code may be changed.	1		
FR_05	Friendly account after logging in	When logged in, a nice and friendly front end page will be displayed to the user.	2		
FR_06	Several Modules offered	When logged in, modules like: Basic Information, All Applications and Create a new Application will be offered to the user.	1		
FR_07	'Create new Application' features	When clicking on 'New Application' a dropdown box filled with all the services offered by the system will be shown. After choosing a service, the price of that service and a list of required documents will be shown below.	1		
FR_08	Uploading the documents	At the right of each document an Upload button resides. If the user uploads a certain doc, a green Tick will appear next to that doc. Format allowed: JPEG, pdf	1		

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_09	Constraints on sending the application	If the user tries to send the application without submitting all the required doc, an error message will pop up and the application will not be sent.	1		
FR_10	Payment features	Without payment, the application will not be processed. The user must have the opportunity to pay electronically by credit card.	1		
FR_11	Check for the status of application	When submitting the application, the user can check for its status at the 'All Applications' module. He can check for the status of payment as well as for the status of application's process.	1		
FR_12	Financier approves the payment	All the applications done by users will be sent first to the finance office. When the financier changes the status of payment to 'Paid, the application is sent only to the specific sector of employees.	1		
FR_13	Updating the status of the application	The account page for an employee must have at least the section of 'Completed Applications' and 'Pending Applications'. If an employee changes the status of application to 'complete' the application will be moved to the table of 1st section.	1		

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_14	Coordination of employees' work	When an employee of a specific sector opens an application of a client, other employees will see a symbol beside it meaning that someone else is processing it and would not be able to open.	1		
FR_15	SMS and Email Notification	After the application has been processed, the user will get notified via SMS and Email for the status of his/her application.	2		
FR_16	Retrieve forgotten password through email	If the user forgot the password of his account, he can use a temporary password sent to him through email and change it later.	1		
FR_17	Registration restriction	The system shall not allow registration of a user with the same first name, father's name and last name of an existing user.	2		
FR_18	Admin Access	The admin shall have access in all information and perform CRUD operations of all sectors	1		

3.2 Non-Functional Requirements

3.2.1 User Interface Requirements

The domain of DPSHTRR will redirect the user to the front-end web page of DPSHTRR where they can information about services and operations that our software does. In this view, there will be different categories from the information side and also this page will include a section where the users will sign up for the first time and a section where they sign in. The Sign In interface will be responsible for the sign in from both parts, the citizens and the management. If the user inputs wrong credentials there will be an alert. The sign in interface will also have a Forgot Password function. After the user(citizen) logs in, it will be shown the dashboard interface with a menu from where the users will request their services and where they can get detailed information about the services and their account. From the management part of DPSHTRR different views and functionalities will came up depending on the sector that the employee works. Different sectors will deal with different services, they will have a dashboard interface where they can get all the general information, inside this view will be a menu that will offer

the different operations that the employee can do. All interfaces have to be very simple for every kind of users that the system will have by giving detailed descriptions in every interaction that the system has with the users.

3.2.2 Usability

The software shall have a simple usability in terms of:

1) Accessibility
2) Efficiency
3) Learnability
4) Responsiveness (including different devices)
5) Performance

3.2.3 Performance

On behalf of performance we will make sure our program performs at its highest speed.

- The software should support unlimited users and data to be loaded, since we know the environment in which it will work so building a strong server is a must.
- The performance of the software is going to depend on the server used. JavaScript and Ajax will be used which means that it will be light weighted and the browser won't crash.
- Beside this we will specify minimum required system capabilities for each user using our software.
- Also, we will clarify the minimum upload to be used in order to avoid system crash.

3.2.3.1 Capacity

The software will operate in the whole region of Albania state where thousands of people can achieve online service without being in line or losing time. Multiuser will be supported and they can perform their tasks without any problem, performance will be on top of everything.

3.2.3.2 Availability

The Software will be available nonstop 24/7 for everyone than need service. Since our Software project is for general purposes, it will cover and operate in whole region of Albania state. People will realize at the end (after getting serviced) the amount of time that is saved but it will have a big impact in society for further problems raised. They even can check their status online, so when everything is ready they can go and pick their service.

3.2.3.3 Latency

The response time for the program to process some data will be very efficient and very fast, but as mentioned above it will be explained when completed about minimum system requirement for the software to be usable.

3.2.4 Manageability/Maintainability

3.2.4.1 Monitoring

The program as we have previously mentioned will be user friendly, and very easy to use. Also, a "?" button will be available on top corner of the program's window so the user can check for solutions in case they have some problems with the program. Also we will provide a channel for users to directly contact with a person responsible with the way the system works.

3.2.4.2 Maintenance

We will provide simplicity of "coding structure" which will make easy to go back and improve the software.

3.2.4.3 Operations

Everybody that has an account in this web application will have the opportunity to choose among several services. After choosing the desired service, a list of required documents will be shown. The client has to scan these documents and submit them in our web application. However, for the application to be complete, the client has to pay a certain fee. This fee can be paid either by bank or by credit Card. Now, the client has to wait until the employees on the other side check their documents. If the documents are accurate, then the status of the application will appear as "READY" and the client may go at the "DPSHTRR" office to pick up his service. Otherwise, the client will be informed about the missing/not accurate documents.

3.2.5 Security

3.2.5.1 Protection

The factors that will protect the system from malicious or accidental access, modification, disclosure, destruction, or misuse. For example:

- Encryption
- activity logging, historical data sets
- data integrity checks

Security provided to the access of user private information.
Security provided to access of data.
Restriction provided to access of data.

3.2.6 Data Management

There will be variety types of data which will be places in our database:
1. Firstly we will have the data for the user such is name, surname, email address, telephone number etc. The user can be an employer of the company or a client.
2. There will be data for all the types of services that can be offered to the client.
3. There will be financial data for all the services that the client will need.
4. Certain data will be accessed by certain users respect to the tasks they must perform, so not all the data can be accessed by everyone.
For example, economist or finance office will take carry about the fees if they are paid correct or not.
5. The system will also require some different document format uploads, such as PDFs, words, .jpg, etc.

3.2.7 Standards Compliance

The user in order to sign in to the web to make the request for the desired service, he must register firstly, with his personal data. Then he can proceed to request the service, after that he need to complete all the document that are required for that specific service and also the fee needed to be paid. The user has to wait until the employer approves the documents and after that all is done.

3.2.8 Portability

Our software can be running on different platform without an additional effort. Our web application which is developed mainly in PHP will be accessed by Safari, Chrome, Mozilla, etc. so the application will be portable even from smart phones. Other technologies that will be used in our web application is HTML, CSS, BOOTSTRAP, MYSQL, JAVASCRIPT, AJAX etc. The whole database will be saved in 'DSHPTRR' server.

3.2.9 Other Non-Functional Requirements

3.2.9.1 Environmental Requirement

- The software will be operating all the time nonstop. So, a client can make his request at what time he is able and comfort to do it. Its performance is measured when a subsystem fails, so the ability it has to restore in the previous or normal state is a manner that eliminates or at least minimizes down time.

3.2.9.2 Operational Requirement

- Reporting in the real time
- Backup and recovery information

3.2.9.3 External Requirement

- The system shall not disclose any personal information about customers
- The database should be encrypted

3.3 Domain Requirements

Domain requirement is about the environment that the system will operate. In our case we have to do with requesting and processing services.
Our system has to take into account:

- unclear documents submitted by the clients
- Poor desktop resolution
- Documents without appropriate seal

4. User Scenarios/Use Cases

Provide a summary of the major functions that the product will perform. Organize the functions to be understandable to the customer or a first time reader. Include use cases and business scenarios, or provide a link to a separate document (or documents). A business scenario:

- Describes a significant business need
- Identifies, documents, and ranks the problem that is driving the scenario
- Describes the business and technical environment that will resolve the problem
- States the desired objectives
- Shows the "Actors" and where they fit in the business model
- Is specific, and measurable, and uses clear metrics for success

In here you may define the written user scenarios tested in the UCED Application given to you.

APPENDIX

The appendixes are not always considered part of the actual Requirements Specification and are not always necessary. They may include

- Sample input/output formats, descriptions of cost analysis studies, or results of user surveys;
- Supporting or background information that can help the readers of the Requirements Specification;
- A description of the problems to be solved by the system;
- Special packaging instructions for the code and the media to meet security, export, initial loading, or other requirements.

When appendixes are included, the Requirements Specification should explicitly state whether or not the appendixes are to be considered part of the requirements.

Appendix A. Definitions, Acronyms, and Abbreviations

Define all terms, acronyms, and abbreviations used in this document.

Appendix B. References

List all the documents and other materials referenced in this document.

Appendix C. Requirements Traceability Matrix

The following trace matrix examples show one possible use of naming standards for deliverables (FunctionalArea-DocType-NN). The number has no other meaning than to keep the documents unique. For example, the Bargaining Unit Assignment Process Flow would be BUA-PF-01.

For example (1):

Business Requirement	Area	Deliverables	Status
BR_LR_01 The system should validate the relationship between Bargaining Unit/Location and Job Class.---Comments: Business Process = "Assigning a Bargaining Unit to an Appointment" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
BR_LR_09 The system should provide the capability for the Labor Relations Office to maintain the job class/union relationship.---Comments: Business Process = "Maintenance" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-02 BU Assignment Rules Maint Process Flow Diagram	ReadyForReview

For example (2):

BizReqID	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted
BR_LR_01	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_01	1	BUA	BUA-PF-01	Derive Bargaining Unit-Process Flow Diagram	Accepted

BizReqlD	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-UCD-01	BU Assign LR UseCase Diagram	ReadyForReview
BR_LR_01	1	BUA	BUA-UCT-001	BU Assignment by PC UseCase - Add Appointment and Derive UBU	Reviewed
BR_LR_01	1	BUA	BUA-UCT-002	BU Assignment by PC UseCase - Add Appointment (UBU Not Found)	Reviewed
BR_LR_01	1	BUA	BUA-UCT-006	BU Assignment by PC UseCase - Modify Appointment (Removed UBU)	Reviewed
BR_LR_09	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted
BR_LR_09	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_09	1	BUA	BUA-PF-02	BU Assignment Rules Maint Process Flow Diagram	Accepted
BR_LR_09	1	BUA	BUA-UCD-03	BU Assign Rules Maint UseCase Diagram	Reviewed
BR_LR_09	1	BUA	BUA-UCT-045	BU Assignment Rules Maint: Successfully Add New Assignment Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-051	BU Assignment Rules MaintUseCase: Modify Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-053	BU Assignment Rules MaintUseCase - Review Assignment Rules	Reviewed
BR_LR_09	1	BUA	BUA-UCT-057	BU Assignment Rules MaintUseCase: Inactivate Last Rule for a BU	Reviewed
BR_LR_09	1	BUA	BUA-UI-02	BU AssignRules Maint UI Mockups	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-021	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-027	BU Assignment Rules Maint TestCase: Modify Rule - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-035	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Error Condition	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-049	BU Assignment Rules Maint TestCase: Modify Rule - Error Condition	ReadyForReview

For example (3):

BizReqlD	CD01	CD02	CD03	CD04	UI01	UI02	UCT01	UCT02	UCT03	TC01	TC02	TC03	TC04
BR_LR_01			X		X		X			X		X	
BR_LR_09	X			X		X			X		X		X
BR_LR_10	X			X					X		X		
BR_LR_11		X											

Appendix D. Organizing the Requirements

This section is for information only as an aid in preparing the requirements document.

Detailed requirements tend to be extensive. Give careful consideration to your organization scheme. Some examples of organization schemes are described below:

By System Mode
Some systems behave quite differently depending on the mode of operation. For example, a control system may have different sets of functions depending on its mode: training, normal, or emergency.

By User Class
Some systems provide different sets of functions to different classes of users. For example, an elevator control system presents different capabilities to passengers, maintenance workers, and fire fighters.

By Objects
Objects are real-world entities that have a counterpart within the system. For example, in a patient monitoring system, objects include patients, sensors, nurses, rooms, physicians, medicines, etc. Associated with each object is a set of attributes (of that object) and functions (performed by that object). These functions are also called services, methods, or processes. Note that sets of objects may share attributes and services. These are grouped together as classes.

By Feature
A feature is an externally desired service by the system that may require a sequence of inputs to affect the desired result. For example, in a telephone system, features include local call, call forwarding, and conference call. Each feature is generally described in a sequence of stimulus-response pairs, and may include validity checks on inputs, exact sequencing of operations, responses to abnormal situations, including error handling and recovery, effects of parameters, relationships of inputs to outputs, including input/output sequences and formulas for input to output.

By Stimulus
Some systems can be best organized by describing their functions in terms of stimuli. For example, the functions of an automatic aircraft landing system may be organized into sections for loss of power, wind shear, sudden change in roll, vertical velocity excessive, etc.

By Response
Some systems can be best organized by describing all the functions in support of the generation of a response. For example, the functions of a personnel system may be organized into sections corresponding to all functions associated with generating paychecks, all functions associated with generating a current list of employees, etc.

By Functional Hierarchy
When none of the above organizational schemes prove helpful, the overall functionality can be organized into a hierarchy of functions organized by common inputs, common outputs, or common internal data access. Data flow diagrams and data dictionaries can be used to show the relationships between and among the functions and data.

Additional Comments
Whenever a new Requirements Specification is contemplated, more than one of the organizational techniques given above may be appropriate. In such cases, organize the specific requirements for multiple hierarchies tailored to the specific needs of the system under specification.

There are many notations, methods, and automated support tools available to aid in the documentation of requirements. For the most part, their usefulness is a function of organization. For example, when organizing by mode, finite state machines or state charts may prove helpful; when organizing by object, object-oriented analysis may prove helpful; when organizing by feature, stimulus-response sequences may prove helpful; and when organizing by functional hierarchy, data flow diagrams and data dictionaries may prove helpful.