Alumni Interactive System Requirements Specification

Version 1.0

March 31, 2019

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1. Executive Summary

1.1 Project Overview

It seems like once you finish university, there is nothing to connect you with it anymore. However, the reality shows a different story. Once you graduate, The Career and Alumni Office becomes an integral link that continues the relationship between you and the university. At Epoka University, where we currently study, the role of the CPAO consist on creation and enhancement of the relationship between the Epoka University and its alumni. They establish new relationship with new alumni, strengthen the old ones and encourage volunteers and donors to get involved in many international events and activities. The Career Planning and Alumni Office stimulates the interest and participation of students and alumni in the life of the University by fostering interaction between the two groups and involving them in common activities and projects. Also, the Alumni office encourages the current Epoka students to become active, loyal, and supportive alumni following graduation.

Since its foundation in 2007, Epoka University has experienced a tremendous increase in the number of enrolled students and as a result, a high increase in the number of the alumni students. This trend has been noticed especially during the last 5 years, due to new study programs for both undergraduate and graduate students, the continuous ranking of the university as the first in Albania, the unique opportunities that the university offers, etc.

According to the information obtained by the Career Planning and Alumni Office, the number of alumni students is currently 1700 and it is expected to rise up to 3500 graduates by 2020. Considering that Alumni data is kept manually by the Career Office using spreadsheet software programs, a major problem has raised: all these data will soon become extremely difficult to collect, maintain, distribute and update. Furthermore, statistical analyses would be hard for the Career Office to generate and also provides the necessary information needed during the decision-making process to the Board of Directors of Epoka University. What is more important, all the work at CPAO is done by only one person, which increases the difficulty of this process.

For these reasons we have decided to create an alumni management system, which will digitalize the alumni information in order to facilitate and improve the performance of the Career and Planning Alumni Office of Epoka University. This system will not only make the process of CPAO more efficient, but also will simplify the communication between the office and alumni students.

1.2 Purpose and Scope of this Specification

The main purpose of the Alumni Interactive System would be the digitalization of every Epoka alumni information into a well-structured management system integrated with a social network, that will

help the Career Office and the students themselves to communicate and share their professional background. Currently, the head of this office is gathering and organizing all the data manually, making it difficult to maintain and update the information in real time. The communication lines with the alumni are mostly lost as soon as they graduate, making social media platforms the only possible way of contacting and gathering information related to their professional endeavors. This software will provide an organized approach to data collection which will decrease errors and will be less time-consuming. Furthermore, the communication between alumni students themselves and also between them and the head of the Career Office, will be enhanced through the implementation of a social network.

2. Product/Service Description

AIS is a software that aims to create a communication channel between alumni and Epoka University that will facilitate the performance of the office significantly. The product is customized to meet the needs of Alumni Office of Epoka University. It will be an independent software, that it is created on the basis of the EIS, which is an interactive system of students and professors at Epoka University. Even though the goal and features of our system differs to that of EIS, it will inherit the communication channel that exists between students and professors, as we have seen that this communication is very efficient.

The software also aims to provide the necessary help on each step of the Career Office, from the registration and creating the profiles of new alumni students, viewing all the information on the dashboard, creating alumni reunion events and generating the needed statistics to observe the trends of professional advancement among Epoka alumni. The two main modules of this system will be the students themselves and the head of the CPAO.

2.1 Product Context

This software is related to the Career Planning and Alumni Office of Epoka University, although our information system will provide a better solution to the management of the alumni information that is also done by the CPAO. This solution will be used by both the alumni students and the head of the CPAO to enhance the communication between them and increase the efficiency regarding the update of alumni information.

2.2 User Characteristics

AIS will include the interaction between three main users: the administrator, which in our case is the head of the CPAO, faculty representative and alumni students.

Administrator (super admin):

The administrator is the staff of Epoka University, in this case the head of CPAO. The career office at Epoka University has only one employee who is also the head of the office and is responsible for every

process of the office. Even though, every faculty has an alumni representative, the head of CPAO is responsible for any detail in the process starting from alumni registration, communication and so on. Therefore, he/she will be taking the admin role in our system. This means that he/she will be controlling every task that is undergoing in the AIS as well as register, update or delete students' information.

He/she will have the following functionalities in the system:

a. Create new alumni student profiles and/or events.
b. Read the information from the database.
c. Update the events and/or the alumni data.
d. Delete irrelevant information on the system.
e. Generate and view statistics.

Faculty Representative (admin):

Every faculty has alumni representative, whose main obligation is to assist the head of CPAO, with daily operation regarding alumni registration, creation of events etc. In other words, they should perform some tasks in collection and distribution of information that will help the CPAO in festering the process. Also, he/she can see the statistics generated from the CPAO office and use them accordingly to the faculty needs.

Alumni student (user):

In this case, every student successfully graduated from Epoka University can be part of AIS using his/her Epoka email address. Every student is considered an alumni the moment he/she graduates. In that moment, they can enter in the system and tell some basic information about their current situation, whether they are working studying and so on.

He/she has these functionalities in the system:

a. Create his/her own profile.
b. View his/her profile.
c. Add job postings.
d. Update his/her information.
e. Respond to events and/or job listings.

2.3 Assumptions

On this software:

- It is assumed that the CPAO will have access rights to all the data entered by the alumnistudents as stated on the related Albanian law on data protection.
- It is assumed that the data available on the AIS will be entirely confidential and available only for the head of the CPAO. The alumni students will have confidential rights to view and update only their personal information on the system.
- It is assumed that each alumni student will be able to access the AIS through a simple Internet connection via a computer or mobile device. They can perform CRUD functionalities to their own profile through any connected device.
- It is assumed that the computer devices used to access the system will have either UNIX/Linux, Mac OS or Windows operating systems. The mobile devices are assumed to have either iOS or Android operating systems.
- It is assumed that the head of CPAO is able to access and update the AIS through any connected device effectively and efficiently.
- It is assumed that all users of the AIS will have an active Internet connection.
- It is assumed that any event posting made by the administrator of the system will be available for viewing to all the registered alumni students.
- It is assumed that any job posting made by alumni students will be available to all the other alumni and the administrator of the system.

2.4 Constraints

The system will potentially have the following constraints:

- Every alumni student must log in and/or register with the respective Epoka email.
- The system requires fast internet connection in order to display and load the web pages properly.
- Every user of the AIS must have basic knowledge on the usage of the web application.

2.5 Dependencies

- New job listing posts that are added by alumni student accounts must be firstly approved by the admin account before published on the social network.
- The alumni student users cannot post new meeting events without the approval of the admin account.
- Every account registered on the AIS should be linked to an existing Epoka email.
- The admin account cannot display a fully detailed list of the alumni students, if there are no registered alumni students via the Epoka mail.
- The admin account cannot generate monthly and/or daily statistics based on user activity, location pie charts etc., if the alumni student accounts are not updated to provide the necessary data.

- The faculty representative account cannot register a new alumni student without the registration being approved beforehand by the admin account.
- The faculty representative account cannot view statistics on the alumni student data if there are no registered alumni with fully updated profile details.
- This information system is strongly dependent on effective and efficient communication of the CPAO and the alumni students.

3. Requirements

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_01	The system is implemented as a web application used by three functional user modules: alumni student, faculty representative and administrator.	This will be the main platform of operation for all users.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_02	The administrator account must have all the privileges of the system, where through the dashboard, will be able to generate in real-time details on the alumni students and statistics provided by the data available on the system.	The admin account has full access to all functionalities and can view any data in real-time.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_03	Graphical data expressed by bar charts, pie charts and location data are important for the administrator account and the faculty representative account to be available at all times.	This will be important to generate quick reports for presentation to higher decision-making bodies of the university.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_04	The system must provide the administrator and the faculty representative account with the right to register new alumni students.	This will help to add graduated students manually if they are not using their Epoka email currently.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_0	The administrator account is responsible to approve all the job listings posts made by alumni student accounts and all the alumni student registration made by the faculty representative.	The administrator will approve all posts before they become public for all the users in the system.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_06	Alumni students can register into the management system only through their Epoka email accounts.	This will help identify the real profiles of all alumni graduates.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_07	Administrator and faculty representative can log in into the system with a username and password.	To facilitate easier log in, the admin module will access the system without an email.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_08	The administrator can register new alumni students by providing important information such as: Name, Surname, Date of Birth etc.	This will be one of the main operations of the admin account.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_09	The administrator can register new faculty representative accounts by providing basic information such as: Name, Surname, Faculty etc.	This will be one of the main operations of the admin account.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_10	The administrator account can provide a username and password for the Faculty Representative, for him/her to use when logging in.	The username and password is generated by the ICTC office.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_11	The administrator can view alumni student data in a tabular form where he can sort the data columns either in ascending or descending order, can make quick edits on data through the table and can delete unnecessary information and/or all the information on an alumni student.	Through this view, the admin account can quickly edit and update the alumni student information from the database.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_12	The administrator can view faculty representative data in a tabular form where he can sort the data columns either in ascending or descending order, can make quick edits on data through the table and can delete unnecessary information and/or all the information on a faculty representative.	Through this view, the admin account can quickly edit and update the faculty representative information from the database.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_13	The administrator can add job listings into the system by completing a simple form which requires basic information on the job being posted.	The admin account can post and inform students on available job openings.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_14	The administrator can view all the job posted on the system: his own or the alumni students' posts.	The admin account will be able to access all the posts in the system.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_15	The administrator can either view, edit or delete any job post in the system.	The admin account has all the privileges to update the existing posts.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_16	The administrator can add new events by completing a simple form which requires basic information for the event that is going to be held.	The admin can create a new event organized by CPAO and share in the system.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_17	The administrator can view all the events posted in the system: his own or the alumni students' events.	The admin account will be able to access all the events in the system.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_18	The administrator can either view, edit or delete any event in the system.	The admin account has all the privileges to update the existing events.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_19	The administrator can generate statistics on the alumni students' data such as working positions, sector of work, distribution on a country basis etc.	This will be important to generate quick reports for presentation to higher decision-making bodies of the university.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_20	The administrator can generate statistics on the frequency of job postings on a weekly/monthly/yearly basis.	This will be important to create a deeper understanding to different time frames.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_21	The administrator can generate statistics on the frequency of events on a weekly/monthly/yearly basis.	This will be important to create a deeper understanding to different time frames.	1	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_22	The administrator reports will have the option to be exported via an Excel file into the personal computer.	This extra feature will help the admin account to access the data of the system at any time, even when offline.	3	03/28/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_23	The administrator can change only his own password in the Settings tab.	The admin account is responsible for his own settings preferences.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_24	The administrator can change the personal settings on the notifications of new posts and new events.	The admin account can update the frequency of notifications under this setting.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_25	The administrator can send and receive a personal message to every user of the system.	The social network will provide the possibility of a communication channel that will increase the efficiency.	3	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_26	The alumni student can view his/her own profile and make necessary edits and/or updates on the personal information he/she provides for the system.	The student is responsible for updating his/her own profile information with correct data.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_27	The alumni student account has complete control on the data he/she chooses to make public for other students to see.	The alumni student can control completely the information he/she wants to share in the network.	2	03/28/2019	Sara Makishti, Xhovana Gjinaj
BR_28	The alumni student account can add a new job posting by filling a simple form that requires the basic information for the job listing.	The student can post a new job opening to become public for other students and allow them to apply directly.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_29	The alumni student account can view his own job posts and make the necessary edits or delete them.	The student can edit his posts and update them with new information if necessary.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_30	The alumni student account can create a new event by filling a simple form that requires basic information on the event.	The student can organize reunions with other alumni students in the form of events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_31	The alumni student can view his posted events on the system and make necessary edits or delete them.	The alumni account has all the privileges to update the existing events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_32	The alumni student can view other all the job post that are created by other students and/or CPAO.	This gives the student account the right to view what goes on in his/her own dashboard through the newsfeed on job posts and events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_33	The alumni student can view other all the upcoming events that are created by other students and/or CPAO.	This gives the alumni students a good opportunity to get notified and participate in different events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_34	The alumni student can filter the job posts in such a way that searching is filtered according to preferable specification.	The student should be able to look for certain jobs in the newsfeed that fit his/her own preferences more accurately.	3	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_35	The alumni student has a complete control on the information he/she wants to share or accept with other alumni students in the network.	This includes the protection of private data and how the student wants his/her own personal information to be shared with others.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_36	The alumni student can communicate with other alumni students and/or school representatives through the network.	The social network will provide the possibility of a communication channel that will increase the efficiency.	3	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_37	The alumni student can access the system through his/her personal Epoka email.	The log in for students will be carried out through the Epoka email students to authenticate the real profiles of Epoka graduates.	1	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_38	The alumni student can receive and send messages regarding job posting or events with other alumni students and/or school representative.	The social network will provide the possibility of a communication channel that will increase the efficiency.	3	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_39	The alumni student can receive notifications regarding new job posts, internships, or events.	The social network will provide the possibility of a communication channel that will increase the efficiency.	3	03/31/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_40	The faculty representative is a person, who aims to help the administrator of the system in the collection of alumni student data.	He/she will take the administrator role with constrained privileges.	1	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_41	The faculty representative has his/her own profile in the system.	The faculty representative account will be able to communicate and view information on the system through a personal profile.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_42	The faculty representative account has complete control on the personal data provided in the profile module.	The faculty representative can control completely the information he/she wants to share in the network.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_43	The faculty representative can register a new alumni student by completing a simple form with the necessary information.	This allows faculty representatives to add missing alumni students into the system and simplify the work done by the admin.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_44	The faculty representative can create a new event. He/she can make necessary changes to it.	The faculty representative can organize reunions or any type of event with other alumni students or alumni in collaboration with current students.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_45	The faculty representative can view all the events that are organized by alumni students and/or CPAO.	This gives the faculty representative a good opportunity to get notified and participate in different events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_46	The faculty representative can view all the events that are organized by the faculty.	The faculty representative account has all the privileges to update the existing events.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_47	The faculty representative can view all the reports and statistics, that are generated from the alumni data by CPAO.	The faculty account has access to the updates of statistics regarding alumni data that will be helpful to decision making process.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_48	The faculty representative can export the statistics to an excel form, in order to use them for academic purposes.	This extra feature will help the admin account to access the data of the system at any time, even when offline.	3	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_49	The faculty representative can change his/her existing password in the system.	This is done to protect and update the security concerns of the faculty.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_50	The faculty representative has complete control on the notifications and messages he/she can receive from alumni student or CPAO.	He/she can change and update this through the setting module.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_51	The faculty representative can send/receive notifications on important issues regarding the system.	This will reduce the communication barriers and increase the efficiency.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_52	The faculty representative can send/receive messages to alumni students and/or CPAO.	This will reduce the communication barriers and increase the efficiency.	2	03/31/2019	Sara Makishti, Xhovana Gjinaj
BR_53	The faculty representative will login through the username and password provided by ICTC office at Epoka University.	To facilitate easier log in, the admin module will access the system without an email.	1	03/31/2019	Sara Makishti, Xhovana Gjinaj

3.2 Non-Functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

- AIS is going to be a web-based application, which can be seen at any browser including Google, Mozilla, Safari, Internet Explorer.

- The system must be usable without reading a printed guide. Therefore, the system should not have complex interfaces for any type of user. There would be different system modules in order to structure, simplify and ease the efficiency of the system. The modules would include: dashboard, setting, profile, alumni, social network, events and reports module.
- The main page for every user would be a simple LOGIN page using a google API linking alumni students with their Epoka email. In case of a Faculty Representative or admin login, they have to use the username and password provided by the ICTC office. Whenever, a problem with the credentials has occurred an error message would be displayed to let user know the problem.
- Once the login is successful, the system will direct the user to the appropriate dashboard module, which visually will track, analyze and display key performance indicators of each module.
- Alumni dashboard interface will display some latest and important posts from the social network that alumni student is part of. Also, this interface will provide some of the latest events that the students can participate. In order to simplify the navigation at the page, a side bar is provided at the left with the basic functionalities that the user can perform and a notification bar will be provided to communicate faster.
- Administrator Dashboard Interface will show important alumni's statistics. Also, he/she will be notified for the latest job posting and events and can review and edit them. In order to simplify the navigation at the page, a side bar is provided at the left with the basic functionalities that the user can perform and a notification bar will be provided to communicate faster.
- The alumni profile interface will be similar to a social media, where users can interact with each other's post as well as share their personal experience as an alumni student. His/her profile will display the personal information that is provided by the user regarding personal details, job experience and education.
- The administrator profile interface will display personal information for the registered user.
- Setting module will display a simple configuration page when user can change his password in case of an admin or faculty representative. In alumni case, he/she can change privacy issues, such as who can see the posts and profile.
- The event interface is also an important tool of this application. It will display the latest events organized by either an alumni student or the CPAO. The interface is going to show the details of the event in an attractive manner.
- Statistics interface will show alumni statistics that the university can use in different reports and further analysis. The interface will show tables, pie charts and all the graphical data that will be generated by alumni information.
- Register interface is going to be simple and easy to understand and will prompt the user to enter his/her correct information.

- View interface will generate information from the database to see the number of users registered and their current information. Only the administrator of the system will be able to see this kind of interface as he is the only user who can manage every step of the program.

3.2.1.2 Usability

While analyzing the usability requirement for the WebApp, there were some key indicators to be mentioned:

Accessibility

- Since it is a WebApp, it can be accessed only if the user is connected to internet via Wi-Fi, mobile network etc.

Responsiveness

- The application would be highly responsive in both design and data generator or the social network, which will be integrated in the app.

Flexibility

- The application shall be built in such a way that is very easy to be updated and get adjusted quickly with these new arrangements.
- The application must proceed and manage the errors quickly.

Effectiveness

- This web application would be simple and easy to use, learn and understand.
- In order to foster the user learning the system, a PDF manual would be included, providing necessary, step by step information to learn all type of users how to effectively use the system and achieve common tasks.
- The error messages would be clear, unambiguous and understandable for each user. Also, it will provide the necessary action to be taken in order to fix it.

Efficiency

- The web-app would be very efficient, meaning that each user can accomplish every task easily, quickly and with few or no user errors.
- The interface would be easy to learn and navigate, where every button, headings and help/error messages are very simple to understand.
- It will require a low workload as the interface is not demanding or frustrating.

3.2.1.3 Efficiency

3.2.1.3.1 Performance Requirements

AIS is going to be saved in a web server. Therefore, the performance of this app is strongly determined by the user's internet connection strength, server hardware performance, the algorithm's efficiency on fetching the necessary data from the database, the number of active alumni that are accessing the web at the same time and on the operating system that is installed in the server.

- Since this software is going to web – based, it does require a powerful server machine with high band internet access. Server machine should have a powerful CPU and large speed internet access so that it can handle multiple users at the same time.
- Another performance requirement is the storage space. Higher storage space means more user and bigger workspace per user so higher the storage, better the performance.
- Performance requirement by the user side is, web application should be developed as a lightweight web app so that it can work on almost any platform even with slower internet connections.

3.1.2.3.2 Space Requirement

- Expected number of simultaneous users should be at least 200 when the system is initially active. System should be able to deal with 400 users at the same time. Also, database of the system should handle at least a thousand of users at any periods.
- The maximum simultaneous user load:200
- Per-user memory requirements: 2-4GB RAM, 200GB SSD Total storage.
- Expected application throughput: It is expected that the web application will be able to handle at least 50 requests per second, minimizing the throughput rate.

3.2.1.4 Dependability

Availability

- The application would be available 24/7, therefore you can access it any time.
- The application can be accessed in any geographical area.
- The application is available, only if users have internet access.

Reliability

- The application is expected to have a storage of at least 200GB SSD which will support the growing number of alumni students from 1700 to 3500.
- Having a large storage to support data from 3500+ students and 8 GB of RAM will ensure that the web application will perform quickly and with minimum lagging times.
- Based on tested statistics, the management system will have a median failure rate over the one-month period across clients as 1,47% and across servers as 1,63%, which we expect to have in our system.

Monitoring

- The server will be able to trace each HTTP request to its original user request and will provide the required results in a fraction amount of time.
- The CPAO office will monitor and regularly update the database with data on the system's users.
- The server will be responsible for keeping track on daily and monthly user activity in order to prepare for handling the increasing number of user requests and/or processes.

Maintenance

- The web application will be updated regularly in order to process all the requests in real-time.
- In case of a system crash, the server should redirect the user experiencing the crash into an error page showing the Error 404 standard response code.
- During a crash, the system should restart as soon as the problem occurs by re-configuring the server.

Integrity

- All the data is confidential and must be used only by the respective offices at Epoka University.
- The web application must provide for its users an open and safe exchange platform that will facilitate communication between different modules.
- The administrator account has the main responsibility for adding new user data and maintaining the database.
- All users should provide personal credentials to log in into the system and should be authenticated before accessing their own profiles.

3.2.1.5 Security

- When registering new users with a username and password, the administrator account should send via an email a randomly generated password that automatically encrypted with b-encryption standard.
- The database is centralized to a single admin user and accessible only to the administrator account who performs all the CRUD functionalities on the data.
- The main Epoka server will be responsible for managing all the possible DDOS attacks and breach of data integrity.

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

This web application will be focused on being energy efficient and will manage its resources effectively to prevent overheating through the standard cooling system of the main Epoka servers.
Floor space: An appropriate machine room of the AIS has to be provided in the facilities of Epoka servers.
Power supply: The power requirements of the AIS are standard cable infrastructure as already enabled for other information systems of the university.

System management and user access: For running the AIS effectively, additional hardware used for user login and system administration needs to be installed to support the increasing number of users per year.

3.2.2.2 Operational Requirements

The Alumni Management System will be a web-based platform that facilitates communication between the existing Career Planning and Alumni Office of the university with the respective graduated students from different study programs. As such, this system should be able to allow all alumni students to manage their own information on the profile interface and add new posts regarding job listing and/or events that will be public and interactive with the other alumni graduates.

The main operations that will be available in an alumni student account are as follows:

- CRUD personal information
- Creating and posting job listing and/or events
- Reacting to job posts via comments and/or 'Like' feature
- Viewing all the job posts on the main dashboard
- Filtering the details on the job posts and get preferential posts on the main page

As for the administrator accounts, it will be responsible to maintain all the data and have all the functionalities of the standard alumni student account, granted with extra privileges such as deleting, modifying and viewing personal information. Added operations to admin account will be as follows:

- Viewing user details for alumni students and faculty representatives
- CRUD functionalities on the all the job listings and events.
- Generating statistics for decision-making purposes as provided by the web system data available.

3.2.2.3 Development Requirements

a. Client-Side Programming (Front-end)

Technologies to be used in client-side web development, that involves everything users see on their screens, will be:

- Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Bootstrap 4 framework will be used for managing HTML and CSS.
- JavaScript (JS), to make web pages interactive. We will be using jQuery library.

b. Server-Side Programming (Back-end)

- Programming language: PHP (Laravel framework).
- To store the data: MySQL database (relational database).

- Caching system to reduce the load on the database and to handle large amounts of traffic: Memcached.
- Finally, a web application needs a server to handle requests from clients' computers. The application is going to be saved in Epoka Server.

3.2.3 External Requirements

3.2.3.1 Regulatory Requirements

The Alumni Interactive System will operate under the main domain of Epoka university with the address as follows: *ais.epoka.edu.al*. Privacy policies will be adopted from the Epoka University website in compliance with the provisions of the Law No. 9887, dated 10.03.2008 "On the Protection of Personal Data" and related sub-legal acts. The Privacy Policy describes the types of collected information as well as the way how this information will be used. Like most institutions and entities on the Internet, IP addresses of visitors to this web application are used to help diagnose problems with the main server of Epoka University and to administer the AIS by identifying how the site is being used. IP addresses are not linked to anything personally identifiable. This means that user sessions will be tracked, but the users will remain anonymous.

3.2.3.2 Ethical Requirements

The personally-identifiable information voluntarily provided by users of AIS, such as an email address, name, surname, phone number etc. will never be sold or traded to other higher education institutions, businesses or non-profit organizations

At the same time, AIS will provide to third parties personally-identifiable information of users to this web application if one or more of the following conditions apply:

- The administrator has received the consent of users to share the said information.
- The administrator is requested or is authorized to share the said information by the legislation in force, court orders or an act of a public or regulatory authority.
- The administrator shares the said information in order to protect property rights, or the security of Epoka University premises, its staff members and students as well as other persons.

3.2.3.3 Legislative Requirements

3.2.3.3.1 Accounting Requirements

Taking into consideration the nature of the Alumni Interactive System, there will be no accounting requirements being put into effect for the time being. However, the requirements will be updated if such changes occur in the future.

3.2.3.3.2 Security Requirements

Personal information of every user of this system will be subject to protection by the according regulations and legislative rules that are already being applied within the Albanian territory. The Commission for Personal Data Protection, which is operating in Albania, grants institutions, organizations and/or businesses to a license that allows them to handle personal and sensitive information regarding the users of an information system. As AIS will operate under the domain of Epoka University websites, it will be included in this regulation. According to the law No.9887, dated 10.03.2008, as amended with law No.48/2012, "On the Protection of Personal Data", the personal information of each user should be private and possible to be accessed only by the specified actors. Therefore, the alumni student information is already secured with hashed passwords via the Epoka emails provided during their school years.

This web application will also enforce the latest update on the General Data Protection Regulation (GDPR) as it became enforceable on May 25, 2018 in EU (European Union) and EEA (European Economic Ares) countries.

3.3 Domain Requirements

Alumni Interactive System is a web application that operates in the field of higher institution system of Albania. As the main purpose is digitalization of alumni students' data and management of their posts, the security and careful handling of personal information becomes a crucial aspect of this management system. The web application is only accessible to users with an account and/or Epoka email and it will be working under the servers of the private network that Epoka University is currently running its other websites and management systems. External users will need to have a stable Internet connection in order to log in into their profiles.