



Post-Doctoral Application Management System

Vision and scope document

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Version 1.0

Iteration 4

Prepared for Ms. Cathy Sandis (UP Research Office)
by SoftServe Group

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Change log			
Date	Version	Description	Person
10/02/2014	v 0.0	Original SRS document created.	Mathys Ellis
02/03/2014	v 0.1	Added to glossary.	Mathys Ellis
05/03/2014	v 0.3	Added Introduction, Vision, Background.	Carlo Machaba
06/03/2014	v 0.4	Added open issues. Modified some sections.	Alfred Ngako
06/03/2014	v 0.5	Added methodology, scope and limitations.	Mathys Ellis
08/03/2014	v 0.6	Added some wrapping to the change log which is now a table.	Alfred Ngako
16/03/2014	v 0.8	Did some restructuring and document formatting.	Mathys Ellis
17/03/2014	v 0.8	Also added to the glossary.	Mathys Ellis
12/05/2014	v 0.9	Created new vision and scope document. Transferred necessary content from old SRS document. Performed editing and restructuring of document. Added exclusions.	Mathys Ellis
16/05/2014	v 0.95	Updated use case diagrams and stakeholders.	Mathys Ellis
21/05/2014	v 1.0	Added import and export services and application process. Finalised document for first iteration.	Mathys Ellis

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1 Project Repository

<https://github.com/mox1990/Project-Postdoc.git>

2 Document description:

2.1 Document purpose:

This vision and scope document serves the purpose of providing a detailed overview of the project's scope and its vision as well the goals that SoftServe's Post-Doctoral application management system wishes to satisfy. Further it defines the abstract interaction of stakeholders with the proposed software system. Thus this document serves as a contract between SoftServe and the client, Mrs Cathy Sandis of the DRIS of the University of Pretoria in terms of project scope.

2.2 Documentation methodology

The documentation and software development methodology used by the project adhere to the guidelines set out by the scrum agile methodology. Thus this document has undergone and will undergo various iterations that may extend or reduce the contents of the document.

This document was created using the requirement elicitation techniques and requirement definitions as specified by Klaus Pohl's book Requirements Engineering: Fundamentals, Principles, and Techniques [Dr.Phol, K., 2010]. The requirements, vision and scope were elicited from the following sources:

- Numerous interviews with the client.
- On-line research into UP Post doctoral applications.
- Correspondence with the UP IT department.
- Collecting and analysing various documents such as:
 - The initial project request document
 - Application forms
 - Renewal forms
 - CV templates
 - Approval and recommendation forms

2.3 Document conventions:

- Documentation formulation tool: LaTeX
- Modelling language: UML 2.0

2.4 References:

- Dr.Phil, K., 2010, *Requirements Engineering: Fundamentals, Principles, and Techniques*, Springer, Heidelberg.
- DRIS homepage. [online] Available: <http://web.up.ac.za/default.asp?ipkCategoryID=1630> [Accessed on: 31 March 2014].

3 Project introduction

A Post-Doctoral fellow is a person who conducts research after they have completed their PhD, with the aim of deepening their knowledge in a specific field. The University of Pretoria supports such research opportunities in order to increase research output of the University. Post-Doctoral fellows who conduct their research at the University of Pretoria do so under the supervision of a staff member of the University and their research may be privately or internally funded. This is a growing field in Universities around South Africa. A lack in the software solutions for the application management of Post-Doctoral fellows has been identified by the SoftServe group. To exploit this opportunity the SoftServe group has proposed the following project.

4 Project background

The current Post-Doctoral application and renewal processes are paper based thus there are a number of drawbacks, mainly due to human error. One such drawback is that there is no audit trail when it comes to the input of the different stakeholders involved in approving or declining the applications. Another involves the minutes of Post-Doctoral committee meetings which are often misplaced or typed in an inconsistent manner making it hard to recall what has been discussed in the meeting. These meetings play a critical part in the evaluation of prospective applications and renewal applications thus this is an area of concern. Access to the documents involved in the application process is also a problem since they are usually hard copies that change hands constantly. Thus the process of getting access to the documents is long and tedious if not made impossible, since they run the risk of being lost due to various factors. Reporting on the information of fellows, applications, renewals, etc, as well as even communication with the different stakeholders is also problematic due to the current system not being centralised. Therefore gathering all the information required to generate accurate reports is difficult or even impossible. This is where the client Mrs Cathy Sandis saw a potential area that could be optimised by the implementation of a digitalised system. At this point the SoftServe group was brought into the picture.

5 Project vision

The client needs a system which can make the management of the application and renewal processes of Post-Doctoral fellowships more effective, reliable, secure and audit-able. Together the client and SoftServe have envisioned a system that will make use of a centralised user friendly web interface that will be used by the all the stakeholders involved in the application and renewal processes. The system will have various sections that handle the different stages in the various processes. The system will need to automate the transitions between phases by forwarding the required information to the next stakeholder in the process and notifying them via an email notification or equivalent. The system will also need to provide reporting facilities for the information stored by the system. As well as progress tracking with regards to any application or renewal. The system data needs to be centralised to ensure that any information used by system is cohesive and valid for any stakeholder who accesses it. Another feature the system should host is that of archival support so that old data can be retrieved if needed. The system will also need to allow importing and exporting of data in predefined formats. By introducing a digital system that is not paper based, the client hopes that the application and renewal processes will be easier to track and manage.

6 Stakeholders

The stakeholders that will engage or be engaged by the system are listed below:

There are four categories under which stockholders can fall:

- **System or abstract:** These are stakeholders that represent the system itself and generalized users based on their security roles:
 - **System** - The actual Post-Doctoral application management system.
 - **System administrator** - The super user of the Post-Doctoral application management system. This user has universal access.
 - **Authorised user** - A user that has the necessary security roles to perform the operation.
- **External:** These are stakeholders that do not have a PeopleSoft account or are prospective fellows.
 - **Prospective fellow** - A person who wishes to renew or apply for a post-doctoral research fellowship.
 - **Referee** - A person who is identified by a Prospective fellow as a referral.
- **Internal individuals:** These are stakeholders that do have a PeopleSoft account and are individual members of staff.
 - **Research fellow** - A person who is currently in possession of a fellowship.
 - **Grant holder** - The person who is a fellow's supervisor and a member of staff at the University of Pretoria. This person is also known as the applicant.
 - **HOD** - The head of the department of which a Grant holder is a member.
- **Internal groups:** These are stakeholders that do have a PeopleSoft account and are a group of staff members.
 - **Dean's office** - The dean and deputy dean of the faculty under which the department which a particular Grant Holder is a member of. In some cases this may be the dean and deputy dean of research for that faculty if the faculty provides such a responsibility.
 - **DRIS** - The department of Research and Innovation Support at the University of Pretoria. This stakeholder oversees the application and renewal processes.
 - **Post-doctoral committee** - The committee who evaluates any post-doctoral fellowship applications and renewals.
 - **CSC** - The client service centre of the University of Pretoria.
 - **Finance** - The department of finance at the University of Pretoria.

7 Project Scope:

The scope of the project is to design an Post-Doctoral application management system in the form of a software package where prospective fellows can apply for fellowships and current Post-Doctoral research fellows can renew their fellowships at the University of Pretoria. The system will further allow the management of such applications or renewals till the end of the application process. The end is defined as follows: When the DIRS have approved the application and have notified the CSC and Finance department or when the application has been denied and the prospective fellow does not restart the process. The system will replace the current paper based system currently in place. The system will be designed so to allow for future integration with the current student and personnel management system, PeopleSoft, employed by the University of Pretoria. Though the scope of this project will be to construct the proposed system independently of any other system and allow it to run as a stand-alone system.

7.1 Application process

This section discuss and gives an abstract overview of the post-doctoral new and renewal application processes. Each of the processes are broken up in stages. Each stages need to be passed for the application to proceed. It should be noted that the client has pointed out that sometimes a stage or several stages have not been completed by the application though at the discretion of the DRIS the application may be pushed forward to the required stage. The stages are numbered in accordance to the order in which they occur. It should be noted that both processes only differ at the second stage and slightly at other stages.

- New application
 1. A prospective fellow opens a application for a post-doctoral fellowship.
 2. The referees specified by the prospective fellow, each have to complete a referral report.
 3. The identified grant holder has to communicate with the prospective fellow in order to verify and finalise the application once all the reports are acquired.
 4. The finalised application is then given to HOD of the specified department for approval. On approval the application is supplemented with a recommendation report. The HOD can ask for amendment if he/she feels the need or even deny the application.
 5. The application is then given to the appropriate member of the dean's office who then needs to approve it. On approval the application needs to be endorsed by a motivational letter and rank order relative to other endorsed applications. The dean's office may deny the application.

6. The endorsed application is given to the appropriate member of the DRIS for eligibility checking. If found eligible the application is stored. Else it is denied.
 7. The DRIS member has to arrange and convene a post-doctoral meeting after the application deadline and prepare the pre-documentation of the eligible applications. This documentation is the collection of all the related application data that has been added to each of the initial applications.
 8. The post-doctoral meeting is then convened where the members of the post-doctoral committee evaluate and deliver their insights into the potential applications. This is documented in the form of minute meetings.
 9. The appropriate member(s) of the DRIS then need to make the final funding decision of all the applications based on the minute meetings and record this data.
 10. The data is then summarised accordingly and sent to the finance department as well as the CSC. The grant holder is also notified of this.
- Renewal application
 1. A research fellow opens a renewal application for a post-doctoral fellowship.
 2. The research fellow then needs to complete a progress report.
 3. The identified grant holder has to communicate with the prospective fellow in order to verify and finalise the renewal application once the report is done.
 4. The finalised application is then given to HOD of the specified department for approval. On approval the application is supplemented with a recommendation report. The HOD can ask for amendment if he/she feels the need or even deny the application.
 5. The application is then given to the appropriate member of the dean's office who then needs to approve it. On approval the application needs to be endorsed by a motivational letter and rank order relative to other endorsed applications. The dean's office may deny the application.
 6. The endorsed application is given to the appropriate member of the DRIS for eligibility checking. If found eligible the application is stored. Else it is denied.
 7. The DRIS member has to arrange and convene a post-doctoral meeting after the application deadline and prepare the pre-documentation of the eligible applications. This documentation is the collection of all the related application data that has been added to each of the initial applications.
 8. The post-doctoral meeting is then convened where the members of the post-doctoral committee evaluate and deliver their insights into the potential applications. This is documented in the form of minute meetings.

9. The appropriate member(s) of the DRIS then need to make the final funding decision of all the applications based on the minute meetings and record this data.
10. The data is then summarised accordingly and sent to the finance department as well as the CSC. The grant holder is also notified of this.

7.2 Use cases:

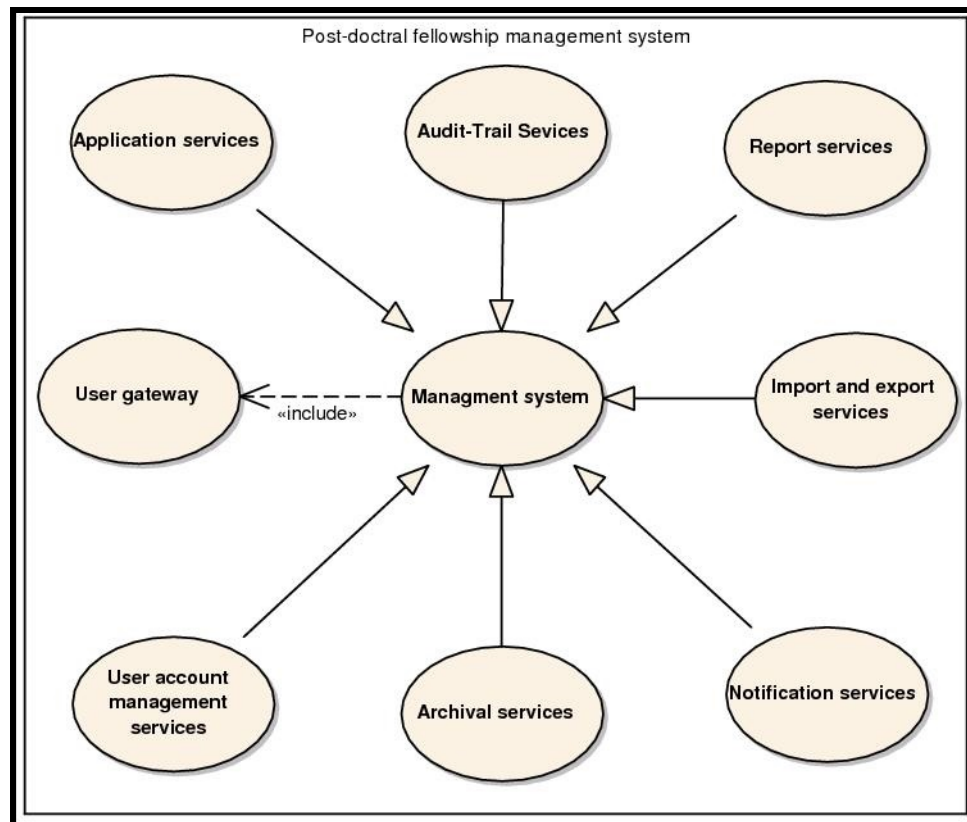


Figure 1: Use case diagram of Post-doctoral fellowship management system

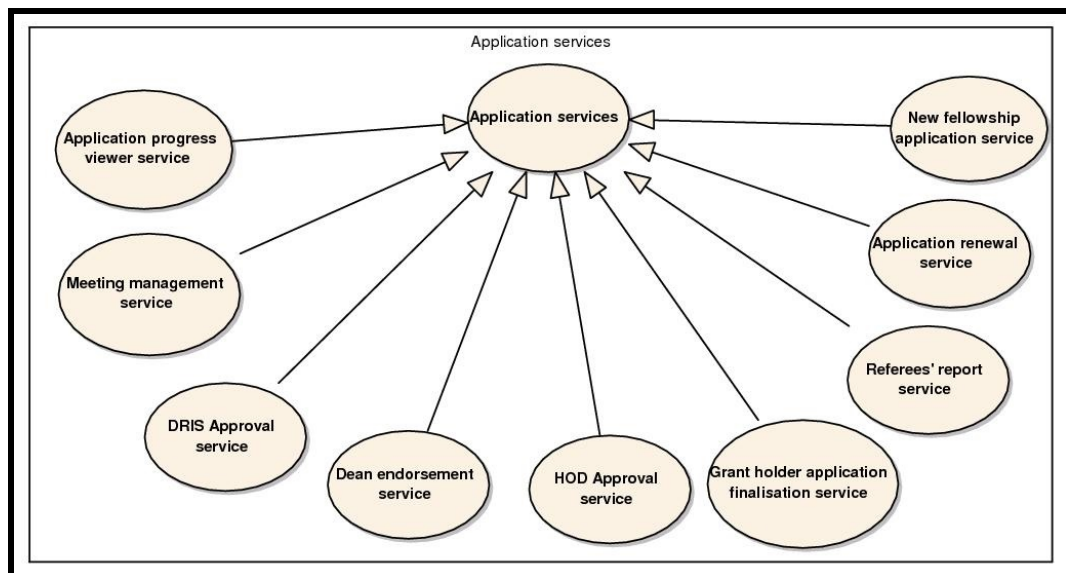


Figure 2: Use case diagram of Application service

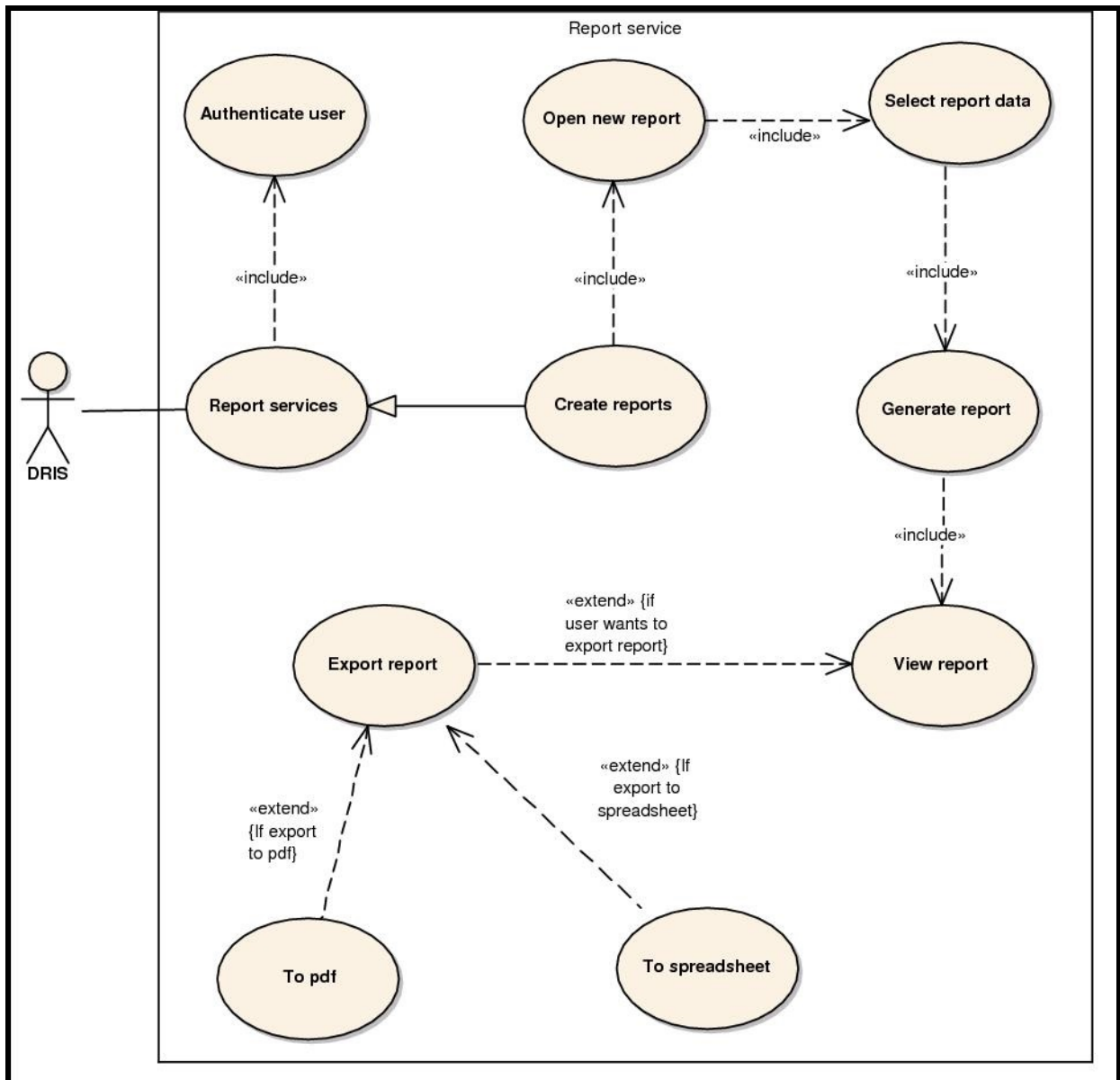


Figure 3: Use case diagram of Report service

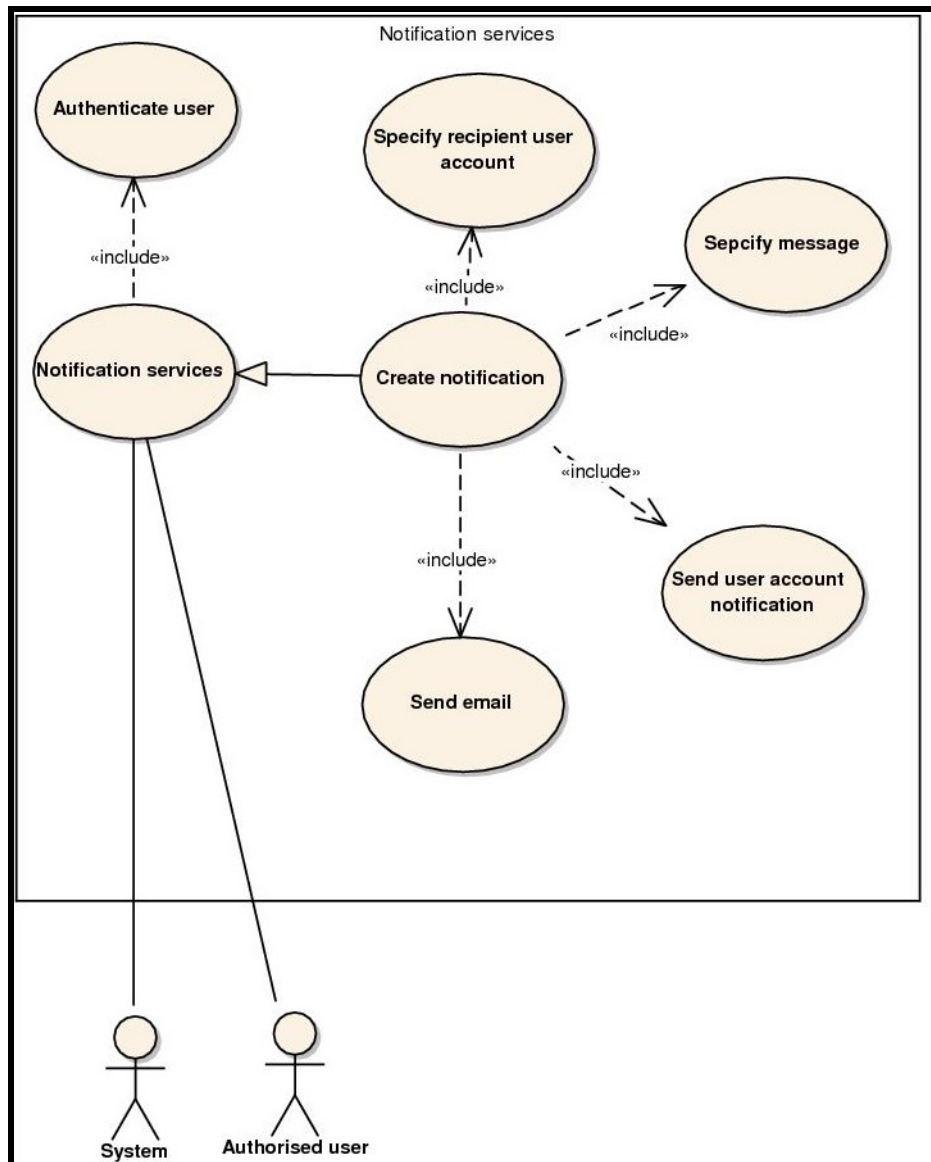


Figure 4: Use case diagram of Notification services

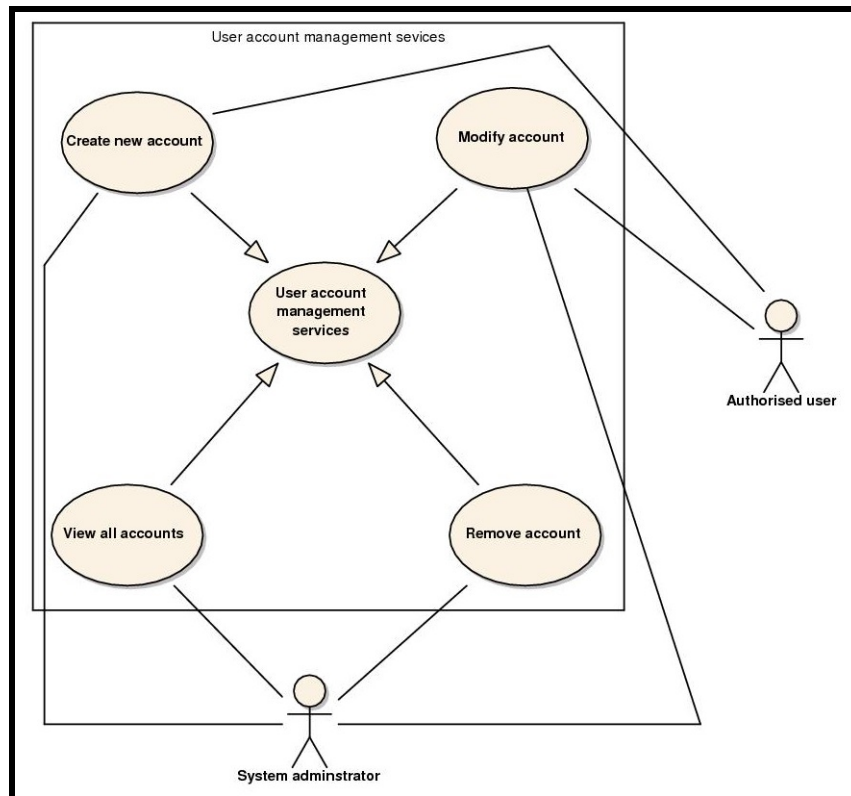


Figure 5: Use case diagram of User account management services

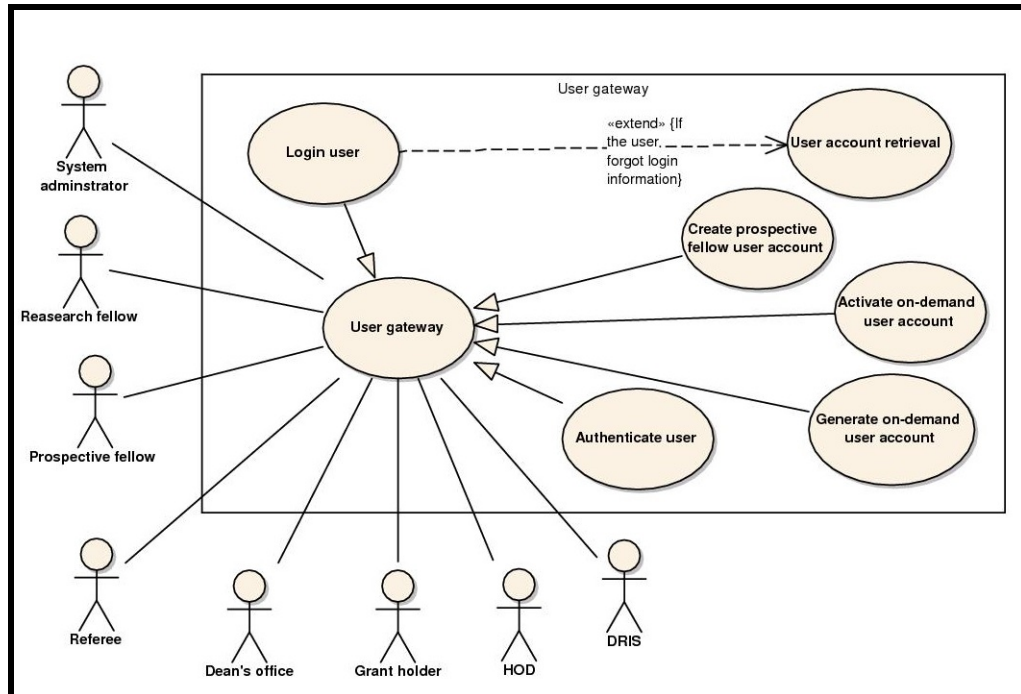


Figure 6: Use case diagram of User gateway

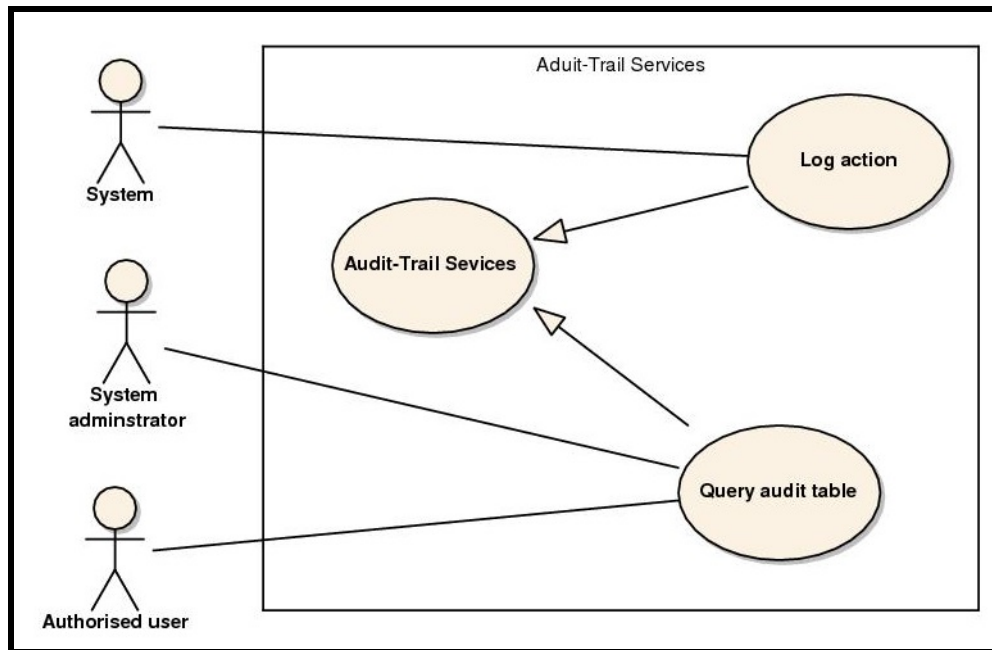


Figure 7: Use case diagram of Audit-Trail services

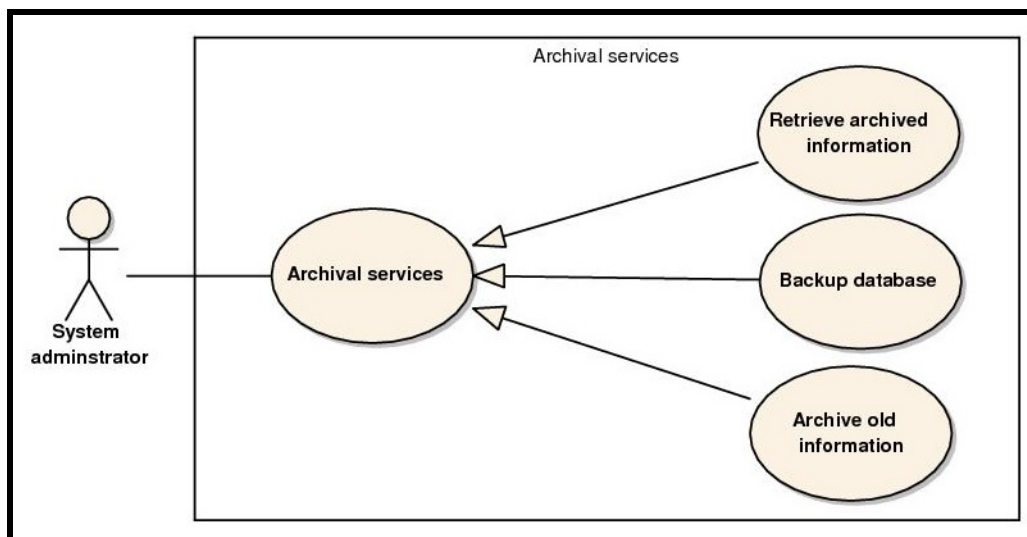


Figure 8: Use case diagram of Archival services

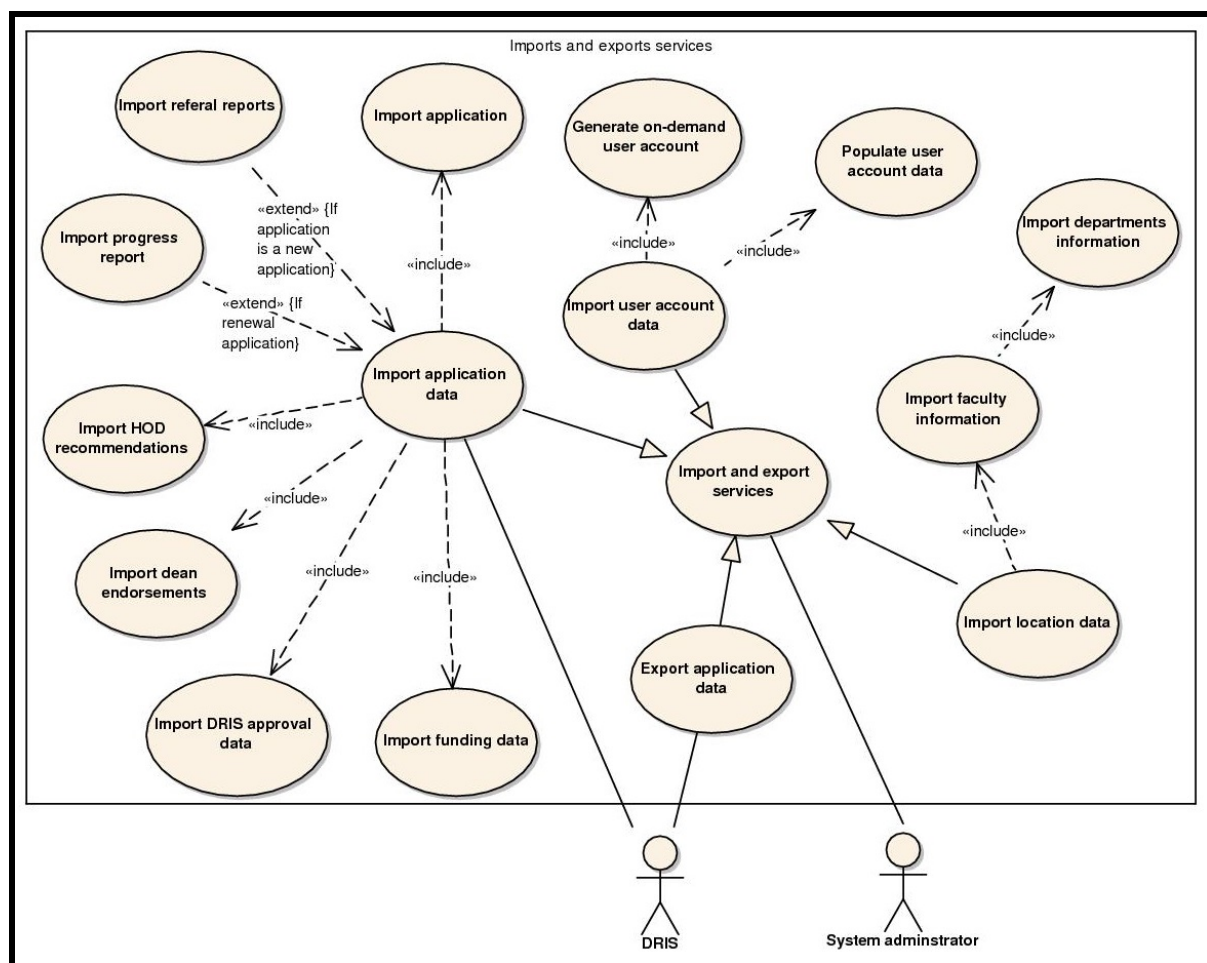


Figure 9: Use case diagram of Imports and exports services

7.3 Limitations

At the time of writing the project is only limited with regards to the integration with the UP network and the UP's current student and personnel management system. This is due to the IT department of UP only being willing to offer these services or knowledge once the project has been successfully completed. But the system will be developed in such a way to consider the known integration requirements, which at this stage is still very limited.

7.3.1 Exclusions

Everything not included in this document in terms of scope is considered not in the scope of the project. Though due to the Agile methodology that is employed by the project the scope may be extended or reduced in later iterations if approved by the client.

8 Glossary:

- **API** - Application Programming Interface
- **Application** -Both renewal applications or new fellowship applications are seen as applications by this project.
- **CV** - Curriculum Vita
- **HTML** - Hyper Text Mark-up Language
- **Java EE** - Java Enterprise Edition
- **NRF** - National Research Foundation
- **PhD** - A doctoral degree in a particular field of study.
- **PDF** - Portable Document Format file
- **Spreadsheet** - A special type of digital document that is used to represent data in rows and columns
- **Use case** - A visual depiction of a service or group of services.
- **UP** - University of Pretoria