Team 01
Requirements Document

Team Members:

[redacted]

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REVISION HISTORY

Date	Revision	Changes
12/02/2010	1.0	Business overview and objectives
15/02/2010	1.1	Non-functional requirement
21/02/2010	1.2	Revising non-functional requirements, Implement data requirements, Start functional requirements: use case glossary
22/02/2010	1.3	Continue implementation of data requirements: example column Check on use case narrative Start business rules and use case diagram
26/02/2010	1.4	Complete the example column in the data requirement table and finilising the Req Doc

TABLE OF CONTENTS

1 PROJECT OVERVIEW

1.1 System Overview & Objective

The Department of Computing Sciences at Nelson Mandela Metropolitan University is one of the largest departments that take part in research activities in the university, as research forms a principal part to supporting the core functions performed by the academics employed by the university. A need has arised for a system that will support the department in managing and administrating research done within the department.

The purpose of undertaking this project is to build a Research Information system for the Department of Computing Sciences in the Nelson Mandela Metropolitan University. The objective of this system is to facilitate and support research administration within the department.

In the past, research was captured and administrated by the departments Administrative Assistant, but that led to difficulties in capturing the information accurately, efficiently and on time.

The key benefits that could be experienced from this Research information system are that it will definitely reduce the amount of time taken on capturing data as the system will be providing a means for each user will be capturing and entering their data and research, in turn also reducing problems previously experienced with inaccuracy of information captured. By making the system a multi user system, it will improve the efficiency of loading projects into the systems and allow for information sharing (i.e.- between supervisor and researcher).

Some additional advantages that could be experienced from the incorporation of this system are that:

- For researchers, it will provide easy access to relevant publications and manageable storage of information.
- The system will also be providing reading and viewing access of the research publications to undergraduate students.
- The department of education will be using the research output to calculate research contributions that will be allocated to the university so the system will intern minister towards the optimization of the funding process.
- The department also generates funding from external sources, therefore a funding tracking system will also be integrated which will keep track of the grants received and applied for, as well as research bursaries offered to the research students.

This research information system could in the long term sustain the research strategy of the university holistically.

1.2 System Assumptions

- It is assumed that because prior difficulties experienced with the previous system included capturing the information timeously and accurately due to having a single user inputting the data, it’s assumed the system will have a networking functionality.

- It is also assumed that the RIS will only be built to assist research within Computing Sciences, and possibly in the long term, essentially support the research strategy of the university as a whole.

1.3 Deliverables Out of Scope

The following are considered out of scope deliverables for this project:

- Conference management system- Since the researchers may be attending conferences, the RIS will not be keeping track of the conferences and managing the scheduling and attendance of researchers, the system will merely store any conference papers read and conference presentations made by the researchers.

- Accounting system- the RIS is not going to cater for the calculation of grants awarded in an accounting manner or facilitates the Department of Education's calculation of the research contributions made by the Department of Computing Sciences, either than keeping track of grants and funding applied for and received.

- Direct Accessibility by the Department of Education- this system will be used to record all the research information to enable reporting to the Department of Education, therefore the DOE does not have direct access into the RIS, reports generated from the RIS are supplied to the DOE.

- The automatic updating of the publication document location is a deliverable that is out of scope because the RIS will not be interacting with the system incorporated by the library in terms of the publication locations, therefore if the location changes, it must be updated manually.

1.4 Stakeholders

1.4.1 Business Actors

Actor	Role
Supervisors	Capture research's publication and they create, edit and update their own profile. Captures the researcher's progress
Administrative Assistants	Maintains and manages the overall research information system e.g. publishing and deleting grants awarded and received. Verifies and approves new profile's level of credential.
Researchers	Views and reads publications submitted. Create, update and edit their own profile. Update their research progress form.

Actor	Role
Guest	Views and reads limited content on the RIS including publications submitted, and their location

1.4.2 Development Team

Team Member	Responsibilities
[redacted]	System design and development including defining requirements, conducting analysis and business modeling, implementation of the system, testing, deploying and the overall project management.
[redacted]	System design and development including defining requirements, conducting analysis and business modeling, implementation of the system, testing, deploying and the overall project management.
[redacted]	System design and development including defining requirements, conducting analysis and business modeling, implementation of the system, testing, deploying and the overall project management.

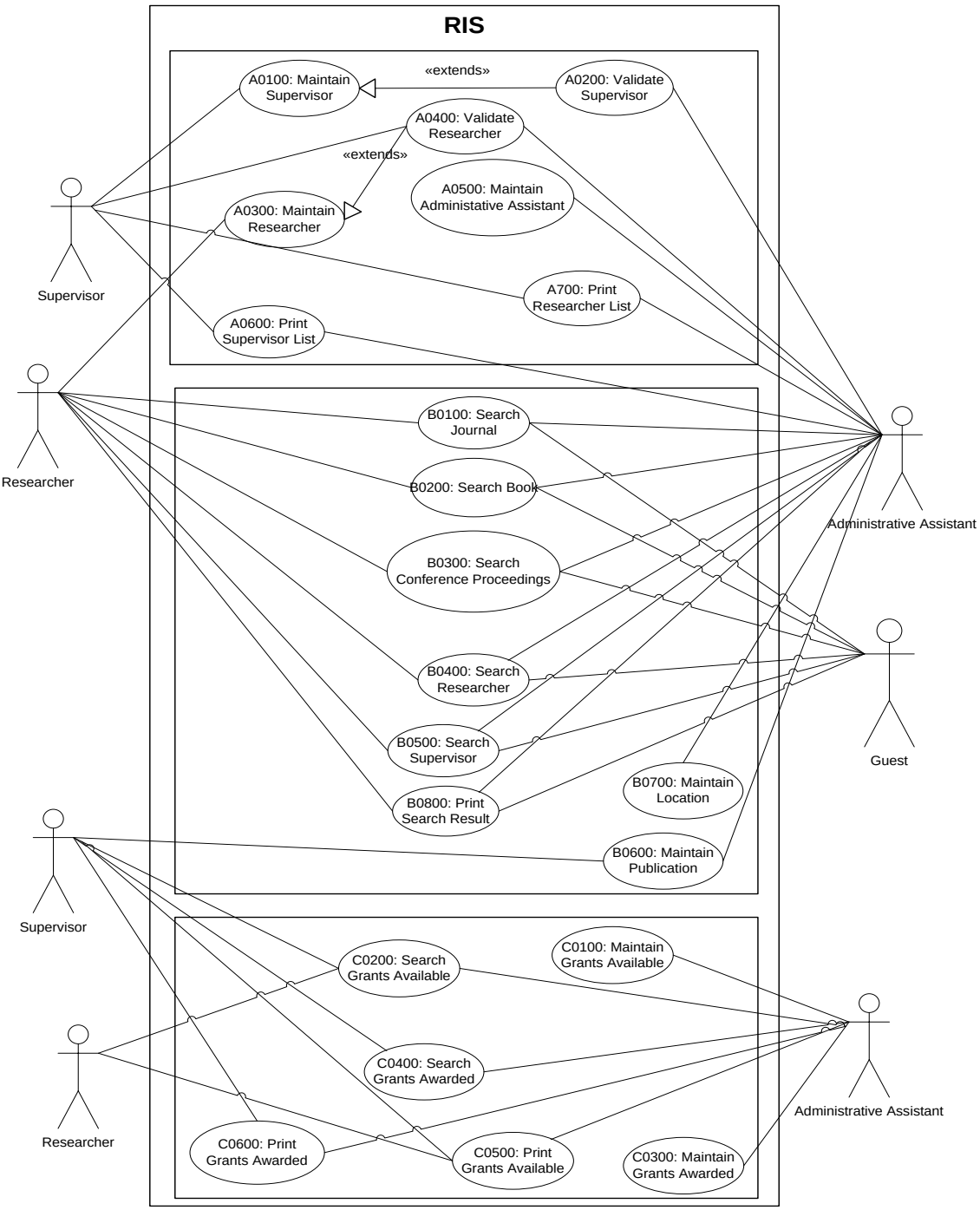
2 FUNCTIONAL REQUIREMENTS

2.1 Business Rules

Rule ID	Rule	Source	Related Rules
BR001	Only the Administrative Assistant and the supervisor are allowed to capture and upload publications into the RIS	Class discussion(Session 3,12Feb 2010)	
BR002	Guests are only allowed to view and read all content excluding grant information on the system		
BR003	The system has an allowance of no more than 50 supervisors.		
BR004	The system has an allowance of no more than 3 Administrative assistant		
BR005	The system will not allow more than one person working on (capturing, editing etc) a document or publication at the same time. (i.e.- if the supervisor is capturing the researchers publication, another Supervisor or the Administrative assistant is not allowed to be working on that researchers publication at the same time)		
BR006	A lecturer researcher, who has been a supervisor, can log in as a supervisor but is not allowed to alter the content of the research he/she is currently busy with.		
BR007	Once a publication has been captured into the system, meaning it has been approved by all channels, cannot be edited or changed.		
BR008	If research is being conducted by more than one researcher collaboratively, only one of them is directly responsible for it (e.g.- filling out forms, submit publication etc)		
BR009	The actual publication document will not be stored on the RIS, but the location of		

	where the document can be found will be.		
BR010	A supervisor must have or create a profile before a researcher can be assigned to them.		BR011
BR011	If a researcher has been allocated a supervisor, then that supervisor validates the researchers profile		BR010
BR012	In the case of a researcher having more than one supervisor, only one of the supervisor validates the profile		BR005, BR010
BR013	All user profiles are validated by the Administrative Assistant except if a researcher has already been assigned a supervisor.		BR011
BR014	The RIS must be aligned with the regulations and policies stated by the university and the department of education.		
BR015	For every publication captured into the system, appropriate forms need to be fully completed.	Department of Research Management [Research Output]	

2.2 Business Use Case Model



2.3 Use Case Glossary

Package Id: A	Package Name: The Maintain Sub-System	
Team Member Responsible: [redacted]		
Use Case Id	**Use Case Name**	**Actors**
A0100	Maintain Supervisor	Supervisor
A0200	Validate Supervisor	Administrative Assistant
A0300	Maintain Researcher	Researcher
A0400	Validate Researcher	Supervisor, Administrative Assistant
A0500	Maintain Administrator	Administrative Assistant
Queries/Reports		
A0600	Print Supervisor List	Administrative Assistant
A0700	Print Researcher List	Administrative Assistant

Package Id: B	Package Name: The Search Sub-System	
Team Member Responsible: [redacted]		
Use Case Id	**Use Case Name**	**Actors**
B0100	Search Journal	Administrative Assistant, Supervisor, Researcher, Guest
B0200	Search Book	Administrative Assistant, Supervisor, Researcher, Guest
B0300	Search Conference Proceedings	Administrative Assistant, Supervisor, Researcher, Guest

B0400	Search Researcher	Administrative Assistant, Supervisor, Researcher, Guest
B0500	Search Supervisor	Administrative Assistant, Supervisor, Researcher, Guest
Queries/Reports		
B0800	Print Search Result	Administrative Assistant, Supervisor, Researcher, Guest

Package Id: C	**Package Name: The Grant Sub-System**	
Team Member Responsible: [redacted]		
Use Case Id	**Use Case Name**	**Actors**
C0100	Maintain Grants Available	Administrative Assistant
C0200	Search Grants Available	Administrative Assistant, Supervisor, Researcher
C0300	Maintain Grants Awarded	Administrative Assistant
C0400	Search Grants Awarded	Administrative Assistant, Supervisor
Queries/Reports		
C0500	Print Grants Available	Administrative Assistant, Supervisor, Researcher

C0600	Print Grants Awarded	Administrative Assistant, Supervisor

2.4 Use Case Narratives

2.4.1 Package A: The Maintain Sub- System

Use Case ID	Use Case Name	
A0100	Maintain Supervisor	
Primary Business Actors		**Other participating Actors**
Supervisor		
Description	Supervisors can create, edit and update their profile. When creating a new profile, they have to select their user type but they have to wait for the admin assistant to confirm their status. Supervisors may not delete their own profile or anyone elses.	
Pre-Conditions	To create a profile a supervisor shouldn't have a profile already To edit and update a profile, supervisors should have an existing profile	
Triggers	Supervisor chooses to create or update their profile	
Post-Conditions	Profile is created or updated	
Basic Flow of Events	1. Supervisor clicks on new profile 2. New profile pages is displayed 3. Supervisor inputs required data for a profile 4. Supervisor clicks saved profile 5. The admin assistant is notified of the new profile and has to verify the supervisors status	

Use Case ID	Use Case Name	
A0200	Validate Supervisor	
Primary Business Actors		**Other participating Actors**
Admin Assistant		
Description	A new supervisor profile has to be validated by the admin assistant to confirm that the supervisor is real.	
Pre-Conditions	A new supervisor profile has been created	
Triggers	A new supervisor profile has been created	
Post-Conditions	The new profile is given the supervisor status and authority that comes	

	with it.
Basic Flow of Events	1. New supervisor profile is created 2. Admin assistant receives notification of the new supervisor profile 3. Admin assistant checks the database to verify the supervisor exists 4. Admin assistant confirms the profile

Use Case ID	**Use Case Name**	
A0300	Maintain Researcher	
Primary Business Actors		**Other participating Actors**
Researcher		
Description	Researchers can create, edit and update their profile. When creating a new profile, they have to include the supervisor that has been assigned to them, if they have been assigned one, and then select their user type but they have to wait for their supervisor to confirm their status. If a supervisor has not been assigned to a researcher, the admin assistant has to validate the new researcher account. Researchers may not delete their own profile or anyone elses.	
Pre-Conditions	To create a profile a researcher shouldn't have a profile already To edit and update a profile, researchers should have an existing profile	
Triggers	Researcher chooses to create or update their profile	
Post-Conditions	Profile is created or updated	
Basic Flow of Events	1. Researcher clicks on new profile 2. New profile pages is displayed 3. Researcher inputs required data for a profile 4. Researcher clicks saved profile 5. The supervisor is notified of the new profile and has to verify the researcher status	

Use Case ID	**Use Case Name**	
A0400	Validate Researcher	
Primary Business Actors		**Other participating Actors**
Admin Assistant		
Description	A new researcher profile has to be validated by the supervisor to confirm that the researcher is real.	
Pre-Conditions	A new researcher profile has been created	
Triggers	A new researcher profile has been created	

Post-Conditions	The new profile is given the researcher status and authority that comes with it.
Basic Flow of Events	1. New researcher profile is created 2. Supervisor receives notification of the new researcher profile 3. Supervisor checks the database to verify the researcher exists 4. Supervisor confirms the profile

Use Case ID	**Use Case Name**	
A0500	Maintain Administrator	
Primary Business Actors		**Other participating Actors**
Admin Assistant		
Description	Admin assistant can create, edit and update their profile.	
Pre-Conditions	To create a profile a admin assistant shouldn't have a profile already To edit and update a profile, admin assistant should have an existing profile	
Triggers	Admin assistant chooses to create or update their profile	
Post-Conditions	Profile is created or updated	
Basic Flow of Events	1. Admin assistant clicks on new profile 2. New profile pages is displayed 3. Admin assistant inputs required data for a profile 4. Admin assistant clicks saved profile	

Use Case ID	**Use Case Name**	
A0600	Maintain Location	
Primary Business Actors		**Other participating Actors**
Admin Assistant		Supervisor
Description	The location of the publications is stored and monitored	
Pre-Conditions	The publication exists and is complete	
Triggers	A new publication is completed and added to the RIS	
Post-Conditions	The location of the publication is stored	

Basic Flow of Events	1. A new publication is added to the RIS 2. Admin assistant inputs the location of the publication 3. The publication's location is stored

Use Case ID	**Use Case Name**	
A0700	Print Supervisor List	
Primary Business Actors		**Other participating Actors**
Admin Assistant		Supervisor
Description	The list of supervisors is displayed and can be printed	
Pre-Conditions	Supervisors exist in the system	
Triggers	Admin assistant choses to display the list of supervisors	
Post-Conditions	The list of supervisors is displayed	
Basic Flow of Events	1. Admin assistant choses to see the list of supervisors 2. The list of supervisors is displayed 3. Admin assistant can chose to print the list 4. The list of supervisors is printed	

Use Case ID	**Use Case Name**	
A0800	Print Researcher List	
Primary Business Actors		**Other participating Actors**
Admin Assistant		Supervisor, Researcher
Description	The list of reseachers is displayed and can be printed	
Pre-Conditions	Reseachers exist in the system	
Triggers	Admin assistant choses to display the list of reseachers	
Post-Conditions	The list of reseachers is displayed	
Basic Flow of Events	1. Admin assistant choses to see the list of reseachers 2. The list of reseachers is displayed 3. Admin assistant choses to print the list 4. The list of reseachers is printed	

2.4.2 Package B: The Publication and Search Sub-System

Use Case ID	**Use Case Name**	
B0100	Search Journal	
Primary Business Actors		**Other participating Actors**

Admin Assistant, Supervisor, Researcher, Guest		
Description	User search for a journal article by topic, publication date, researcher, name, supervisor, publisher or by any combine criteria	
Pre-Conditions	User need to be logged in	
Triggers	User click on search button	
Post-Conditions	Display a list of journal article per cathegory search on, otherwise display “no search results found”	
Basic Flow of Events	1. User click menu bar, 2. then click search item and search window appear, 3. user choses search criteria, 4. type in search item and click on search button 5. and then system display search result(s)	

Use Case ID	**Use Case Name**	
B0200	Search Book	
Primary Business Actors		**Other participating Actors**
Admin Assistant, Supervisor, Researcher, Guest		
Description	User search for a book by topic, publication date, author, publisher, ISBN number or by any combine criteria	
Pre-Conditions	User need to be logged in	
Triggers	User click on search button	
Post-Conditions	Display a list of book publication per cathegory search on, otherwise display “no search results found”	
Basic Flow of Events	1. User click menu bar, 2. then click search item and search window appear, 3. user choses search criteria, 4. type in search item and click on search button 5. and then system display search result(s)	

Use Case ID	**Use Case Name**	
B0300	Search Conference Proceedings	
Primary Business Actors		**Other participating Actors**
Admin Assistant, Supervisor, Researcher, Guest		
Description	Search for a conferece proceeding publication by topic, publication date, author, publisher, ISBN number, conference date, city held in, country held in, CESM category number or by any combine criteria	
Pre-Conditions	User need to be logged in	
Triggers	User click on search button	
Post-Conditions	Display a list of conferece proceeding publication per cathegory search on, otherwise display “no search results found”	
Basic Flow of Events	1. User click menu bar, 2. then click search item and search window appear, 3. user choses search criteria, 4. type in search item and click on search button 5. and then system display search result(s)	

Use Case ID	Use Case Name	
B0400	Search Researcher	
Primary Business Actors		**Other participating Actors**
Admin Assistant, Supervisor, Researcher, Guest		
Description	User search for a researcher by topic, publication date, name, staff or student number or by any combine criteria	
Pre-Conditions	User need to be logged in	
Triggers	User click on search button	
Post-Conditions	Display a list of researcher per cathegory search on, otherwise display “no search results found”	
Basic Flow of Events	1. User click menu bar, 2. then click search item and search window appear, 3. user choses search criteria, 4. type in search item and click on search button 5. and then system display search result(s)	

Use Case ID	Use Case Name	
B0500	Search Supervisor	
Primary Business Actors		**Other participating Actors**
Admin Assistant, Supervisor, Researcher, Guest		
Description	Search for a supervisor by name, staff number, author or by any combine criteria	
Pre-Conditions	User need to be logged in	
Triggers	User click on search button	
Post-Conditions	Display a list of supervisor per cathegory search on, otherwise display “no search results found”	
Basic Flow of Events	1. User click menu bar, 2. then click search item and search window appear, 3. user choses search criteria, 4. type in search item and click on search button 5. and then system display search result(s)	

Use Case ID	Use Case Name	
B0600	Print Search Result	
Primary Business Actors		**Other participating Actors**
Admin Assistant, Supervisor, Researcher, Guest		
Description	User first search for an item, then get result(s), view them and decide whether or not to print them	
Pre-Conditions	User need to be logged in	
Triggers	User click on print button	
Post-Conditions	User view search result and decide to send for printing	
Basic Flow of Events	1. from search interface, user view search result 2. then click on print button	

	3. then document is printed

Use Case ID	**Use Case Name**	
B0700	Print Rejection	
Primary Business Actors		**Other participating Actors**
Admin Assistant		Supervisor, Researcher
Description	User first search for rejected research, then get result(s), view them and decide whether or not to print them	
Pre-Conditions	User need to be logged in	
Triggers	User click on print button	
Post-Conditions	User view rejected research list and decide to send for printing	
Basic Flow of Events	1. from search interface, user view rejected research list 2. then click on print button 3. then document is printed	

2.4.3 Package C: The Grant Sub- System

Use Case ID :	**Use Case Name :**	
C0100	Maintain Grants Available	
Primary Business Actors :		**Other participating Actors:**
Administrative Assistant		None
Description	The Administrative Assistant adds newly available research grants to the RIS, edits and updates any modifications requested by the funders on the information provided regarding the grant and deletes grants that have been awarded for research or having passed the application dead-line date from the 'grants available' sub- system.	
Pre-Conditions	A grant must exist and must be approved for public viewing.	
Triggers	The Administrative Assistant of the Department of C.S is informed of a newly available research grant	
Post-Conditions	Grants available for research must be stored in the Grants Available table of the Grants sub-system	
Basic Flow of Events	1. The Administrative Assistant logs into the RIS 2. The Administrative Assistant initiates the addition of a newly available grant or the changes or deletion of a grant already uploaded by invoking the maintain grants available use case 3. The RIS displays the grants available page 4. The Admin Assistant captures the grant information	

	5. The Admin Assistant indicates the end of the maintenance 6. The RIS updates the page

Use Case ID :	**Use Case Name :**	
C0200	Search Grants Available	
Primary Business Actors:		**Other participating Actors:**
Researcher		Supervisor & Administrative Assistant
Description	The Researchers, together with the Supervisors and the Admin Assistant can conduct a search on Grants that are available. This search is categorical (i.e.- search on research topic, research type funding source etc)	
Pre-Conditions	One or more available grants must be stored in the RIS.	
Triggers	The need for funding (Researcher) and the intent of knowledge on available grants for researchers in the C.S department.	
Post-Conditions	The categorical search results are displayed and can be viewed by all Actors.	
Basic Flow of Events	1. A user logs into the RIS 2. This use case is initiated when a user requests a 'grants available' search 3. The system responds by displaying the page 4. The user selects a category with which he/ she wants the search to be conducted on 5. Search results are displayed by the RIS	

Use Case ID :	**Use Case Name :**	
C0300	Maintain Grants Awarded	
Primary Business Actors :		**Other participating Actors :**
System		Administrative Assistant
Description	When a Researcher receives a grant or a grant that was in the 'Available grants' table was deleted as a result of being awarded, then the system moves that grant from the 'Available grants' to the 'Grants awarded' table. And if any changes need to be made regarding the awarded grants, the Admin Assistant can edit and make any changes and updates to that information. If for any reason the grant source pulls	

	out and the grant is retracted, then the Grant is deleted from the 'Grants awarded' table.
Pre-Conditions	The Department of C.S, researcher or supervisor must have been awarded a grant.
Triggers	New grant awarded
Post-Conditions	Grants awarded for research must be stored in the Grants Awarded table of the Grants sub-system
Basic Flow of Events	1. The Administrative Assistant logs into the RIS 2. The Administrative Assistant initiates the addition of an awarded grant 3. The RIS displays the grants awarded page 4. The Admin Assistant captures the grant information 5. The Admin Assistant indicates the end of the maintenance 6. The RIS updates the page

Use Case ID :	**Use Case Name :**	
C0400	Search Grants Awarded	
Primary Business Actors :		**Other participating Actors :**
Admin Assistant		Supervisors
Description	The Admin Assistant, together with the Supervisors can conduct a search on Grants that have already been awarded for research.	
Pre-Conditions	The RIS must have at least one awarded grant stored	
Triggers	The intent of knowledge on grants that have been awarded for research in the C.S department.	
Post-Conditions	The search results are displayed and can be viewed by all actors	
Basic Flow of Events	1. A user logs into the RIS 2. This use case is initiated when a user requests a 'grants awarded' search 3. The system responds by displaying the page 4. The user selects a category with which he/ she wants the search to be conducted on 5. Search results are displayed by the RIS	

Use Case ID :	**Use Case Name :**

C0500	Print Grants Available	
Primary Business Actors		**Other participating Actors**
Researcher		Admin Assistant, Supervisor
Description	A Researcher as well as Admin Assistants and Supervisors can print a complete list of the grants that are available to the Department.	
Pre-Conditions	One or more grants must be stored in the 'Available Grants' table	
Triggers	User decides to print	
Post-Conditions	A printed document is available as output from the printer	
Basic Flow of Events	1. A user is logged in to the RIS 2. After a search of available grants for research is conducted by initiating the 'Search available grants' use-case and the system has displayed the search results … 3. The user initiates a printout of the list displayed from the search by selecting the 'print' option 4. The system displays a window of the printing options (e.g.- colour, # pg's per sheet, scaling etc) 5. The user confirms printing options and selects the ok button 6. The system sends the list to the printer for execution	

Use Case ID :	**Use Case Name :**	
C0600	Print Grants Awarded	
Primary Business Actors		**Other participating Actors**
Admin Assistant		
Description	Admin Assistants as well as Supervisors can print a complete list of the grants that have been awarded to the Department for research.	
Pre-Conditions	One or more grants must be stored in the 'Available Awarded' table	
Triggers	User decides to print	
Post-Conditions	A printed document is available as output from the printer	
Basic Flow of Events	1. A user is logged in to the RIS 2. After a search of grants already awarded for research is conducted by initiating the 'Search grants awarded' use-case and the system has displayed the search results … 3. The user initiates a printout of the list displayed from the search by selecting the 'print' option 4. The system displays a window of the printing options (e.g.- colour, # pg's per sheet, scaling etc) 5. The user confirms printing options and selects the ok button	

	6. The system sends the list to the printer for execution

3 NON-FUNCTIONAL REQUIREMENTS

3.1 Interface Requirements

The systems developers' intention is to make this RIS a user- centered design by making the system easy to learn and use for the user. The goal is to make the system as interactive as possible and aligning the system and automation boundary closely.

The system will achieve good UI by:

- Striving for consistency in the design, overall look and navigation of the system.
- Enable frequent users to use shortcuts by providing shortcut keys that will reduce the number of interactions for a given task.
- Offer informative feedback to the user by incorporating a visual or audio recognition of an execution of any task performed by the user, in turn notifying the user that the action is performed.
- Offer simple error checking by adding in input integrity controls which will automatically inform the user of any invalidities captured.
- Because the one way users can learn about a system is through experimenting, easy reversal of actions is an important component of the user interface and the system will include this by confirming actions, providing 'undo' features and 'cancel buttons' for any possible mistakes and errors users may need to rectify.

The RIS will also conform to GUI principals by making all visible controls functional and provide immediate feedback to the user.

3.2 Performance Requirements

This system is a multi-user system, therefore the data capturing process needs to not only be quick but also efficient in terms of low response times to capturing, updating and processing queries, as the system may have multiple users in different locations accessing the system at the same time. The system should also be able to operate smoothly and the volume of data be handled resourcefully, consequently allowing other applications to be executed at the same time.
The system needs to be reliable by most importantly, being operational every day. Information that was captured and saved is backed up automatically in specific time intervals.

3.3 Security Requirements

The RIS needs to incorporate an established security program which will integrate both technical and data safeguards as a means of security.

The RIS will be assimilating five different types of users as a means of identification and authentication; therefore the system will be categorized into five levels of accessibility. All types of users, namely the Administrative Assistant, supervisor, post grad researcher, lecturer researcher will have unique log on details (school user names and chosen passwords) except the guest user, who will have direct access into the RIS with no logging in credentials required. All users will fall under one of the five profiles which will keep control on which users are granted privileges and what grounds the privileges are given on.

The first and most privileged access is given to the Administrative assistant, as this group of users will be allowed to not only capture data into the RIS but also have editing, updating and deleting rights to any content placed on the system, (e.g. verifying new profiles of undergrad students, supervisor and researchers that have not been allocated a supervisor and granting them access to the system; publishing available grants and funding, deleting already awarded grants) except publications submitted by supervisors. This is the overall management and maintenance of the RIS.

The second level of access is given to the supervisors, so that they can create, edit and update their own profiles, as well as verifying their researcher's profiles and granting them access into the RIS. It is the responsibility of the supervisor to upload and capture the researcher's publication and their progress during the research period

There is a distinct security difference between the types of researches and their level of access, namely post grad researcher and lecturer researcher. These two types of researchers have the same security privileges except a lecturer researcher can be a supervisor unless they are busy with research.

The fourth level of access is given to the guests, which are most likely to be undergraduate students within the Department of Computing Sciences. This level of access is very limited as it only grants the guest with reading and viewing rights on publications submitted only.

Once publications are published, they will be encrypted and backup and recovery procedures will be implemented. Because the system will be running on a windows operation system, anti-virus and malware protection is imperative to preserve the integrity of the data. Operational Requirements

The RIS will be requiring the client components to be running on ordinary PC's and notebook laptops; it will therefore be compatible with Microsoft Windows 7, Vista and XP. A minimum of 250MB of RAM will be required. Networking capabilities are required as a local area network will be employed because the system will be operated within the Department of Computer Science for the time being, and no access outside this capacity is required. The client/server components will be written in C#. The system automation boundary will be represented by a mouse, keyboard, scanner, monitor and printer.

A 2008 SQL Server database will be used to manage and store the data captured into the system. A SQL Server Management System will be used during development to maintain the database.

4 DATA REQUIREMENTS

Entity	Example	Entity Attributes
Supervisor	A supervisor can manage more than one researcher.	User name Password First Name Surname Office Number Office Telephone Cellphone Email Website Researcher Qualifications Department
Researcher	A researcher can have more than supervisor. A researcher can either be a lecturer researcher, or a post graduate researcher.	User name Password First Name Surname Office Number Office Telephone Cellphone Email Website Faculty Supervisor Research topic Department Researcher type
Administrative Assistant	The Administative Assistant manages and maintains the entire RIS.	User name Password First Name Surname Office Number Office Telephoneone Cellphone Email Website
Guest	A guest doesn't require a user name and password to access the RIS.	

Research	Research is periodically monitored during the research process.	Topic Researcher Supervisor Publication Type Starting Date Completed Date Cutoff date Progress
Book Publication	Once research has been completed, a book can be printed and submitted to a publisher.	ISBN Number Total Number of pages Page number from Page number to Total number of pages claimed Researcher Publisher Target group Book Editor Number of times viewed Location Description
Conference Proceedings	Once a conference has been attended by a researcher or supervisor, the conference proceedings are captured and stored in the RIS.	Title Claimed Title of Conference Researcher Conference date Host Country Host City CESM Category number ISBN number Number of times viewed Location Description

Journal Articles	Once research has been completed, a journal article can be printed and submitted to an accredited journal publisher.	Title of Article Researcher Name of Journal Publisher Volume Number Page number from Page number to Publication year Number of times viewed Location Abstract
Available Grants	once a grant has been offered to the department, it's captured into the RIS and users can view it.	Agency Amount Category Duration Application_Exp_Date
Grants awarded	Once a grant has been awareded for research, supervisors and admin assistants can view it.	Agency Amount Category Duration ResearcherName SupervisorName Conditions
Location	Location is the place where a hard copy publication is physically stored.	Building_Code Building_Name Aisle_Number Shelf_Number
Department	A department contains the basic details of that particular universities department.	Dept_Name Dept_Code Description HOD Contact_Number Email_Address

5 DOCUMENT APPROVAL

The undersigned acknowledge that they have reviewed the **REQUIREMENTS DOCUMENT** and agree with the information presented within this document. Changes

to this **REQUIREMENTS DOCUMENT** will be coordinated with, and approved by the undersigned.

Signature: _____ **Date:** _____

Print Name: [redacted]

Role: System Designer, analyser, implementing modeling, project manager and developer

Signature: _____ **Date:** _____

Print Name: [redacted]

Role: System Designer, analyser, implementing modeling, project manager and developer

Signature: _____ **Date:** _____

Print Name: [redacted]

Role: System Designer, analyser, implementing modeling, project manager and developer