
Software Requirements Specification

for

Sydney Wildlife Rescue and Care App

Version 3.0 approved

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Revision History

Name	Date	Reason For Changes	Version
Jonathan	2/5/16	Fixed errors, added new user class, use case diagram, RTM and assumptions	V2.0
Jonathan	27/5/16	Added new user class, updated use case diagram, context diagram and RTM	V3.0

1. Introduction

Sydney Metropolitan Wildlife Services Inc. (Sydney Wildlife) currently have to fill in multiple animal record forms whenever they encounter a sick, injured or orphaned wildlife. The forms would often get lost, and as a result the status of some animals would be unknown. It is estimated that only 15% of all incidents are recorded and submitted to NSW National Parks and Wildlife Service. Also, Sydney Wildlife carers currently have to use their own judgement to access the animals, whether to release it back to its natural habitat or to continue caring for it. There is no consistency or rigour in the assessment and decisions about treatment. Sydney Wildlife would like to improve the record and assessment of incoming wildlife by creating a smartphone application that can be used to eliminate the need for paper forms and also provide a decision tree that can be used to advice suitable actions based on the observations of injured animals. Sydney Wildlife would also like the increase the quality of carers. Sydney Wildlife Rescue and Care App (SWRCA) is suggested as a solution to the stated problems.

1.1. Purpose

The purpose of this Software Requirements Specification (SRS) document is to present the features to be provided with the Sydney Wildlife Rescue and Care App (SWRCA), SWRCA V1.0. This document is intended for the client (Sydney Wildlife) and the users of SWRCA, to provide assurance that the development team understands the issues to be solved and the client's requirements. This SRS is written in compliance with the recommendations of IEEE Standard 830-1998 (IEEE, 1998).

1.2. Product Scope

SWRCA Is a web application requested by Sydney Metropolitan Wildlife Services Inc. (Sydney Wildlife), and it is intended to improve the processes at Sydney Wildlife. This application will be accessible on any device that has access to the internet, through a web browser. This service will only be available to Sydney Wildlife members, and they are required to have a membership ID and password to access the system.

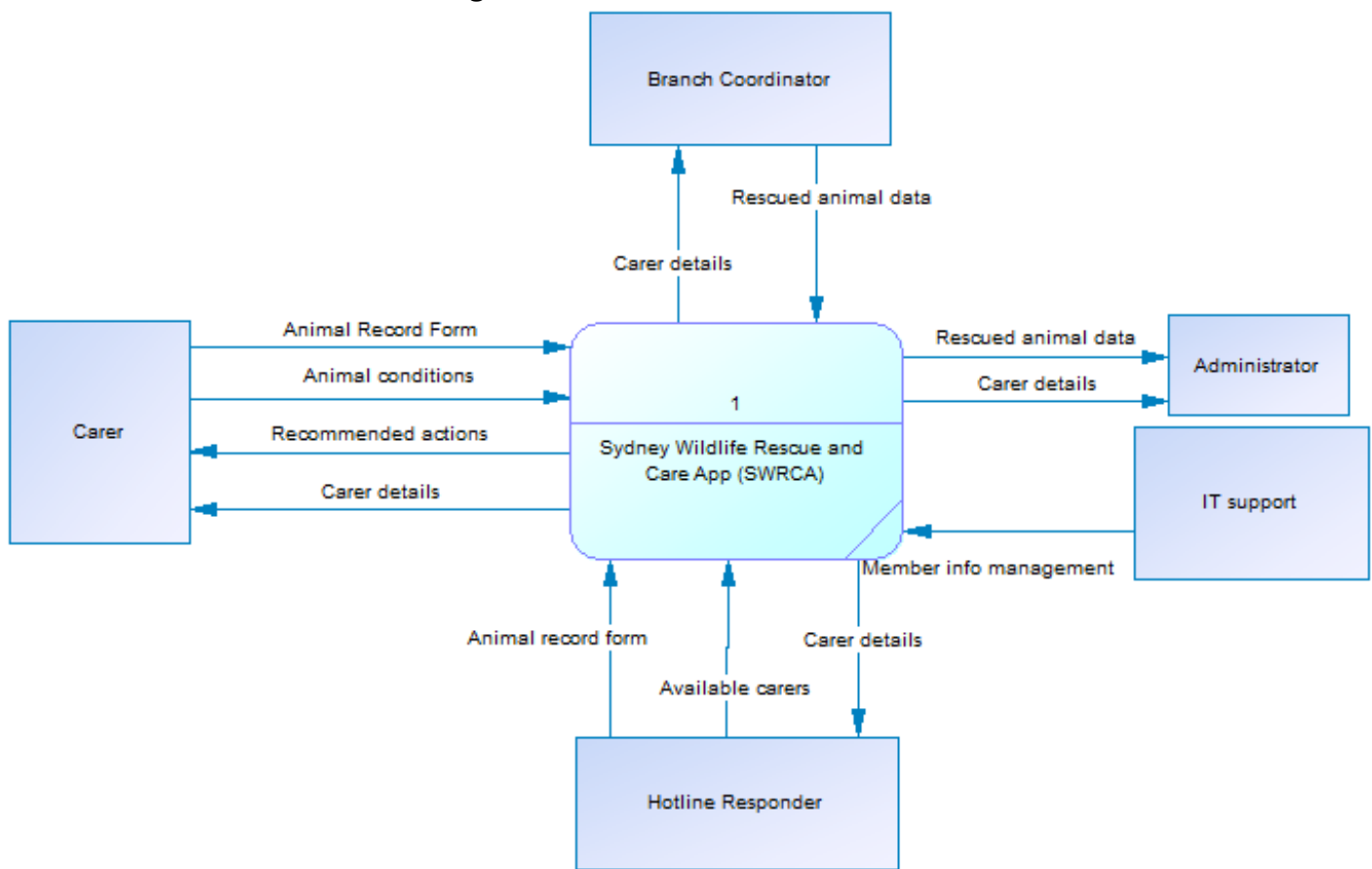
Different users will have different levels of access.

1. Branch Coordinators can view the contact details for all carers and access the database to view the status of animals that branch is responsible for.
2. Carers will be able to fill in animal record forms electronically through the use of SWRCA, and they will be sent to the database. Carers will be able to search the contact details of each other. The SWRCA aims to improve the competence of carers and rescuers by also being a tool that provides recommended actions based on the conditions and type of animal.
3. Hotline responders will also be able to fill in forms and search for available carers and contact them to rescue animals.
4. IT support will be responsible for the management of all SWRCA users. They will be able to add, update and delete member accounts, and change the level of access each user are authorised. They can view information of every member and animal in any branch.
5. Administrators will be able to view and search all member and animal details across all branches of Sydney Wildlife

Animal records stored in the database can be compiled and sorted to be delivered to NSW National Parks and Wildlife Service.

The SWRCA should not require any additional software or hardware for it to function.

1.2.1. Context Diagram



1.3. Definitions, Acronyms and Abbreviations

Administrator: Sydney Wildlife member responsible for overseeing all members and animals in all Sydney Wildlife branches

Carer: Sydney Wildlife member responsible for caring sick, injured or orphaned animal

Branch Coordinator: Sydney Wildlife member responsible for managing all incoming wildlife that enters their branch

Hotline Responder: Sydney Wildlife member responsible for answering the rescue hotline

IT Support: Sydney Wildlife member responsible for managing SWRCA accounts

Member: Carer, hotline responder, branch coordinator, IT support and administrator

Rescuer: Sydney Wildlife member responsible for rescuing sick, injured or orphaned animals

SRS: Software Requirements Specification

SWRCA: Sydney Wildlife Rescue and Care App

Sydney Wildlife: Sydney Metropolitan Wildlife Services Inc.

The System: The web application

UBD: a code from Sydney directory map which represents an area of Sydney

User: users of SWRCA: carer, hotline responder, IT support, branch coordinator and administrator

Webapp: Web application

1.4. References

IEEE, 1998, *IEEE Guide to Software Requirements Specifications*, The Institute of Electrical and Electronics Engineers Inc., accessed 25 March 2016, <<https://standards.ieee.org/findstds/standard/830-1998.html>>.

1.5. Overview of the remainder of the document

The remainder of this specification is split into five more sections. The first of these is *Overall Description*, which outlines the features and functions of the new system. This section is suitable for the client to read.

The second section is *Requirements*, which outlines the functional, performance, design, implementation, non-functional and future requirements of SWRCA. This section is relevant to the team working on the software.

The third section is *Use Case Diagram*, which presents all the different users in the systems and actions they will perform. This section is relevant to both the client and the designers.

The fourth section is *Requirements Traceability Matrix*, which outlines all the requirements related to the development of SWRCA, the use case which they relate to and their priority.

The fifth section is *Assumptions*, which outlines the assumptions the developers have when designing this system.

2. Overall Description

This section contains the general description of SWRCA

2.1. Product Perspective

SWRCA is designed to eliminate the use of paper forms and to improve record-keeping of incoming animal data. Also, SWRCA will increase the competence of Sydney Wildlife carers through the use of decision tree, providing them with appropriate actions based on observations. The current design goal is to develop a web application to achieve the functionality outlined in this document.

2.2. Product Functions

The SWRCA will allow users to submit animal record forms electronically. Information such as record ID, type of animal, name of carer, location found, weight of animal and any injuries incurred will be recorded, which will be stored in a database. Authorised personnel such as branch coordinators will be able to access the database to find out the status of each animal, whether it is in care, released back to their habitats, transferred to another organisation or euthanised. Users can also use SWRCA as a tool to provide recommended actions based on identified animal conditions.

2.3. User Classes and Characteristics

There are four types of users for SWRCA:

Type 1 **Branch Coordinator**, who has overall responsibility for the animals coming into their branch. They are authorised to view all information in the database that are relevant to their branch. The SWRCA will be used to keep track of all incoming wildlife. He/she will be to see the status of each carer: their contact details, facilities available, the number of animals the carer is caring for currently. The coordinator

will be notified of the fate of each animal, whether it is released, relocated to another organisation, euthanised etc.

Type 2 Hotline Responder, who handle the Sydney Wildlife rescue hotline. They answer calls regarding sick, injured or orphaned animals, and they fill in animal rescue forms into SWRCA. This user class will contact carers who are available and have the suitable facilities. They will mainly access SWRCA through a desktop computer using an internet browser.

Type 3 Carers/rescuers, who are responsible for rescuing and taking care of incoming animals. Each carer has different facilities that will be suitable for different animals. For example, some carers have bird cages in their homes and will be suitable for rehabilitating birds. Sometimes carers will have other priorities and will have to relocate the animal in care to another carer. They will have to contact their branch coordinator to search for an available carer. Carers can also use SWRCA for animal advice based on observations of animals.

Type 4 IT Support, who will interact with SWRCA most frequently. They should have a deep understanding of the system as well as the processes at Sydney Wildlife. This user class is responsible for managing SWRCA accounts. This includes adding, deleting and updating accounts. They will have access and control of all areas of the system. They can view information of all Sydney Wildlife members and rescued animals from all branches. They will mainly access SWRCA through a desktop computer.

Type 5 Administrator, who are responsible for overseeing all members and animals of Sydney Wildlife and managing them. They will be able to view all information of members and animals from any Sydney Wildlife branches.

Based on the above categorisations, in order to meet user's needs the following precautions should be taken:

- The interface should be designed with novice computer/mobile device users in mind
- When updating or deleting a record the system should ask the users for confirmation
- The interface should be easy to understand and navigate
- Users should be consulted and demonstrated throughout the design
- The electronic animal record form should mirror the paper form as closely as possible
- Some Sydney Wildlife members might continue to fill in animal record forms manually
- The system should recognise, reject and correct improperly entered data
- An identification number and password will be required to use the application

2.4. Operating Environment

Users must be able to access SWRCA from a variety of devices that can access the internet. This includes desktop computers, laptops, smart phones, iPads and tablets. Therefore, SWRCA must be accessible from operating systems such as Windows, OSX, Linux, Android and iOS. SWRCA should be compatible with multiple web browsers including Internet Explorer, Mozilla Firefox, Google Chrome and Safari.

2.5. User Documentation

A tutorial for each user type will be included in the application, showing the functions that are available to each user according to their needs and access level. New members will receive a short demonstration as part of their orientation to Sydney Wildlife.

3. Requirements

3.1. Functional Requirements

R1 Fill in animal record forms

Carers and hotline responders shall be able to fill in animal record forms using SWRCA

R1.1 The system shall generate a new record ID whenever a new record form is created (+1 of previous record ID)

R1.1.1 The rescued animal ID shall be the same as record ID

R1.2 The e-form shall be accessible on the homepage of the web application

R1.3 The e-form shall contain information required for animal identification

R1.4 The e-form shall be as succinct as possible

R1.4.1 The e-form shall not exceed more than 20 fields

R1.5 The e-form shall not be accessible to the public

R1.6 The e-form shall use the internet to update the database

R1.7 Partially completed forms can be saved

R1.8 The e-form shall be able to be saved and be accessed again in the future

R1.9 Carers shall be able to search for animal forms of the animal they are taking care of

R1.10 When the fate of animal is determined and performed, the respective e-form will be finalised and further changes to the e-form will be prohibited

R1.11 The e-form shall include the name and member ID of the hotline responder who created the form

R1.12 The e-form shall include the name/s and member ID of the carer/s who will look after the animal

R1.13 The e-form shall be able to be viewed by members after the form is finalised

R2 Search carers

The system shall be linked to Sydney Wildlife's current member management software, WildApricot, for the searching of carers

R2.1 Hotline responders, branch coordinators, IT support and administrators shall be able to search the details of carers.

R2.2 The system shall display carers' personal information, contact details, what type of animals they specialise in, animal facilities they have available, when they are available and animals they are caring/have taken care of

R2.3 IT support and administrators shall be able to search carers in any branch

R2.4 Hotline responders and branch coordinators shall only be able to search carers in their own branch

R3 Taking care of animals

The system shall track animals and carers

R3.1 When an animal is needed to be rescued, hotline responder will search for available carers situated near the location of incident

R3.2 When the hotline responder finds a carer that can rescue an animal, the record ID will be linked to the carer

R3.3 The web application shall include what animal is assigned to which carer

R4 Use decision tree

Carers shall be able to use the decision tree feature of SWRCA

R4.1 The decision tree shall recommend carers the best decision for flying foxes based on observations identified

R4.2 The decision tree shall allow carers to give a rating on a scale of 1 to 3, indicating the severity of condition/injury

- R4.3** The decision tree shall weigh each decision and determine the viability of flying foxes
- R4.4** The decision tree shall be applicable for more animals in the future

R5 Compile animal information

The system shall compile all animal information from animal record forms from all branches

- R5.1** Administrators and IT support shall be able to view all information
- R5.2** Branch coordinators shall be able to view animal information from their own branch
- R5.3** Carers and hotline responders shall be prohibited from accessing the animal database
- R5.4** The database shall be able to be sorted for easy viewing
- R5.5** The web application shall show animal health data and how it has changed over a period of time

R6 Manage member accounts

IT support shall be able to manage accounts which allow the access of SWRCA

- R6.1** The login ID shall be the same as Sydney Wildlife member ID
- R6.2** IT support shall be able to reset the passwords of member accounts
- R6.3** IT support shall be able to create new accounts for new Sydney Wildlife members
- R6.4** IT support shall be able to update member accounts
 - R6.4.1** IT support shall be able to change the information stated in member account
 - R6.4.2** IT support shall be able to change the level of access of account. I.E. carer to hotline responder
- R6.5** IT support shall be able to delete member accounts, for people who are no longer members of Sydney Wildlife

3.2. Performance Requirements

R7 User log in

The system shall only allow one SWRCA log in from one member ID at a time

- R7.1** The system shall not permit log in to SWRCA if the same member ID is already accessing SWRCA from another location

R8 Different users

The system shall distinguish between carer, hotline responder, branch coordinator, IT support and administrator

- R8.1** The system shall grant different functions to different users depending on user class identified

R9 Up to date information

The system shall update relevant areas upon refresh or when the page is navigated to

R10 Current members

The system shall only allow current members to use the application

R11 Search performance

The system shall provide search functions that are fast and responsive

3.3.Design Requirements

R12 Accessibility

The system shall be able to be accessed from mobile devices, laptops and desktops

R12.1 The web application shall require an internet connection

R12.2 The web application shall be compatible with multiple web browsers including Internet Explorer, Mozilla Firefox, Google Chrome and Safari

R12.3 The web application shall be viewable on a mobile phone

R12.3.1 The web application shall be presented clearly and concisely on a small screen

R13 Sydney Wildlife logo

The system shall display the Sydney Wildlife logo on every page

R14 GUI

The system shall be accessible to all users with basic computer literacy

R14.1 The system interface shall be graphically simple and easy to navigate

3.4.Other Non-functional Requirements

3.4.1. Security Requirements

R15 Security

The system shall maintain the privacy and integrity of member information

R15.1 The system shall not store member information locally

R15.2 The system shall retrieve member information from database

R15.3 The system shall maintain the privacy standards and ethical code of Sydney Wildlife

R16 System backup

The system shall perform backups daily, at 2AM

R16.1 The system shall perform incremental backups every hour

R17 Database security

The system shall prompt for member log in and password again to access the database

R18 Unauthorised access

The system shall be protected against common attacks as best as possible

R18.1 The system shall include measures to protect against SQL injection attacks

3.4.2. Access Requirements

R19 Login system

The system shall have a login system before accessing the web application

3.4.3. Usability Requirements

R20 Usability

The system shall be available for use 24/7

R20.1 If maintenance of system is necessary, it shall occur at a time when it is the least disruptive on users

3.4.4. Future Requirements

R21 SMS messaging

The system shall send a SMS message to all available carers close to the location of animal incident to search for potential carer

R21.1 The first carer to receive and accept the message shall take care of the animal

R21.2 The system shall send another SMS message to the other carers stating that an available carer has already been found

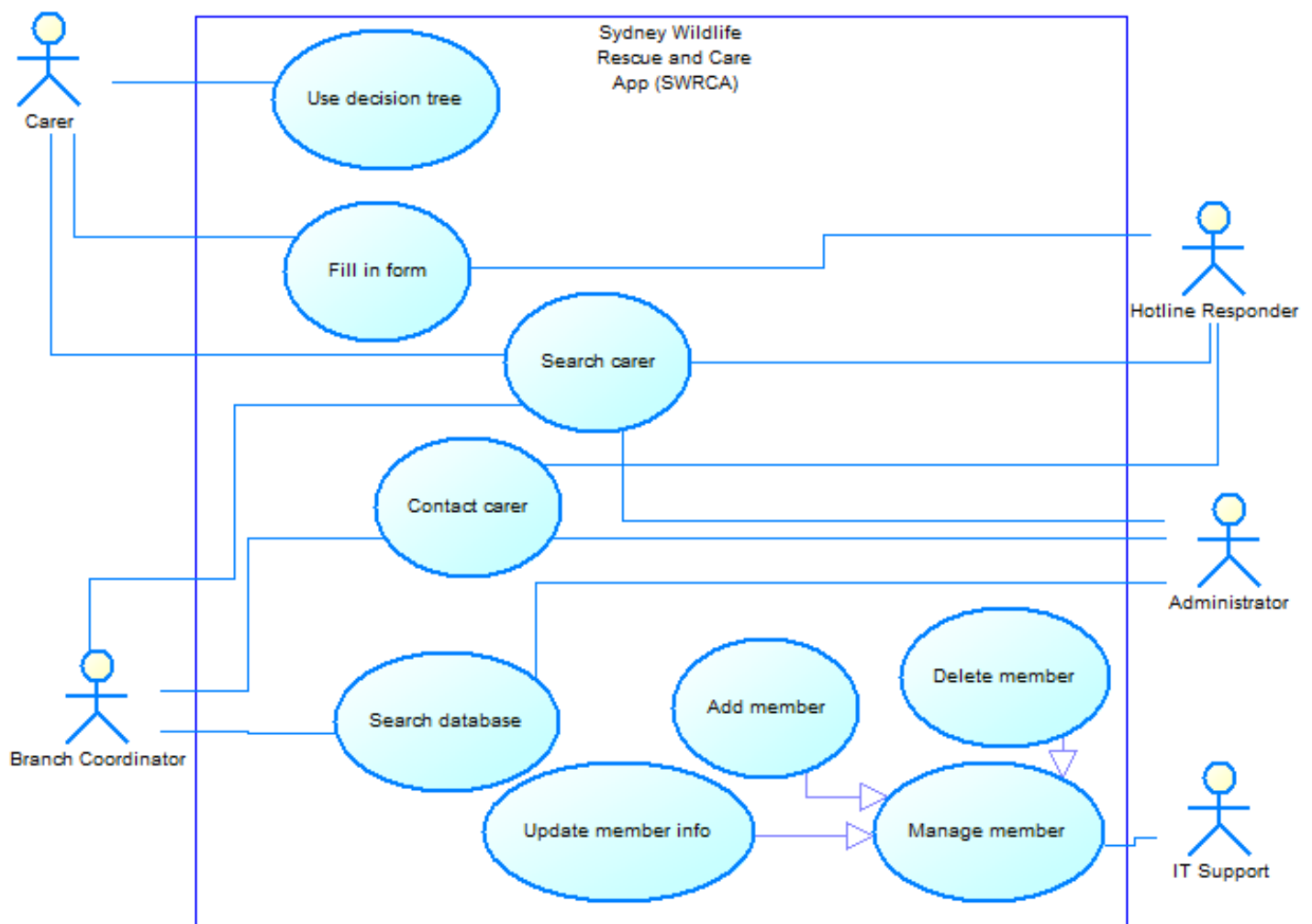
R22 Notification

The system shall notify branch coordinator and administrator when a new animal record is created or updated

R23 Multiple languages

The web application shall be available in multiple languages

4. Use Case Diagram



4.1. Use Case Descriptions

Use Case	Use decision tree	
Goal	Carer uses decision tree to find recommended action based on animal observations	
Preconditions	<ol style="list-style-type: none"> 1. User must have access to SWRCA 2. Decision trees are limited to specific animals 3. User has an internet connection 	
Success End Condition	Decision tree provides good suggestions for animal identified	
Failed End Condition	Carer does not find the information he/she wants	
Primary Actors	Carer	
Trigger	Carer uses the "Wildlife help" function of SWRCA	
Description / Main Success Scenario	Step	Action
	1	Open the SWRCA app
	2	Choose the "Wildlife help" button
	3	Enter relevant animal information (type, age, weight, measurements, injuries, observations, etc) and submit it
	4	Display a recommended action
Alternative Flows	Step	Branching Action
	3a	Insufficient animal information, too general
	4a	Cannot display a recommended action
	3b	Enter relevant animal information
	4b	Decision tree does not support the animal stated
	5b	Display "no suggestions"

Use Case	Fill in form	
Goal	Carer and hotline responder fill in animal record forms for record keeping	
Preconditions	<ol style="list-style-type: none"> 1. New animal in need of care/rescue is identified 2. Users can access SWRCA 3. Users have internet connection 	
Success End Condition	A new animal record form is created and filled in	
Failed End Condition	No new form is created	
Primary Actors	Carer and Hotline responder	
Trigger	When someone calls the hotline and an animal incident has occurred, user presses "Animal form" button on SWRCA	
Description / Main Success Scenario	Step	Action
	1	Open SWRCA
	2	Press "Animal form" button
	3	A new animal record form is created
	4	A new record ID is generated
	5	Hotline responder enters caller information (name, contact number, location where animal is found)
	6	Search for carer and enter available carer's contact information
	7	Save form
	8	Carer finds the form on SWRCA and enters animal information (type, age, sex, weight, measurements, injuries, observations)
	9	Save form
Alternative Flows	Step	Branching Action
	3a	Search for existing form
	4a	Update form

	5a	Save form
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Use Case	Search carer	
Goal	Members search carers to view their contact information	
Preconditions	<ol style="list-style-type: none"> 1. Only carers in the same branch are visible 2. Cannot search for past carers 3. User can access SWRCA 4. User has an internet connection 	
Success End Condition	Carers' contact details are visible	
Failed End Condition	Cannot view contact details	
Primary Actors	Hotline responder, branch coordinator, IT support and administrator	
Trigger	Member wishes to search the contact details of carers	
Description / Main Success Scenario	Step	Action
	1	Open SWRCA
	2	Press "search carers" button
	3	Display all carers in this branch
	4a	Sort by UBD
Alternative Flows	Step	Branching Action
	4b	Sort by availability
	4c	Sort by animal specialisation

Use Case	Contact carer	
Goal	Members contact carers to search for available carers	
Preconditions	<ol style="list-style-type: none"> 1. Only current carers can be searched and contacted 2. Member can access SWRCA 3. Member has an internet connection 	
Success End Condition	Carer can be contacted	
Failed End Condition	Carer cannot be contacted	
Primary Actors	Branch coordinator, hotline responder and administrator	
Trigger	Member wishes to communicate with carer	
Description / Main Success Scenario	Step	Action
	1	Member searches for carers' contact details
	2a	Member calls carer
Alternative Flows	Step	Branching Action
	2b	Member texts carer
	2c	Member emails carer

Use Case	Manage member	
Goal	IT support manages members' (carer, hotline responder and branch coordinator) SWRCA account information	
Preconditions	<ol style="list-style-type: none"> 1. Only IT support can manage members 2. Must have internet connection 	
Success End Condition	SWRCA member accounts can be added, deleted or updated	
Failed End Condition	No control over SWRCA accounts	
Primary Actors	IT support	
Trigger	IT support wishes to add, delete or update member information	
Description / Main Success Scenario	Step	Action
	1	Generate new member ID and password

	2	Fill in new member information (name, contact number, email address, address, animal specialisation, animal facilities available)
	3	Set level of access
	4	Send member ID and password to member
Alternative Flows	Step	Branching Action
	1a	Search current members
	2a	Update member information
	2b	Delete member information and account

Use Case	Search database	
Goal	User searches animal database to find out the status of each animal	
Preconditions	<ol style="list-style-type: none"> 1. Only IT support, administrator and branch coordinator can search database 2. Branch coordinator can only view information that is relevant to their branch 3. IT support and administrator can view all information from all branches 4. User must have internet connection 	
Success End Condition	Database can be searched by branch coordinator, IT support and administrator	
Failed End Condition	User cannot access database	
Primary Actors	Branch coordinator, IT support and administrator	
Trigger	User wishes to search the database	
Description / Main Success Scenario	Step	Action
	1	Open SWRCA
	2	Press "Wildlife Database" button
	3	Display spreadsheet of all animal information
	4a	Sort database by animal ID
Alternative Flows	Step	Branching Action
	4b	Sort by UBD
	4c	Sort by animal type

5. Requirements Traceability Matrix

Requirement ID	Use cases	Packages or subsystems	Build number	Test cases
1	Fill in form	Creation and transfer of profiles	1	1.1
1.1	Fill in form	Creation and transfer of profiles	2	1.1
1.1.1	Fill in form	Creation and transfer of profiles	1	1.1
1.2	Fill in form	Creation and transfer of profiles	1	1.1
1.3	Fill in form	Creation and transfer of profiles	1	1.2
1.4	Fill in form	Creation and transfer of profiles	1	1.2
1.4.1	Fill in form	Creation and transfer of profiles	1	1.2
1.5	Fill in form	Creation and transfer of profiles	1	1.3
1.6	Fill in form	Creation and transfer of profiles	1	1.1
1.7	Fill in form	Creation and transfer of profiles	1	1.4
1.8	Fill in form	Creation and transfer of profiles	1	1.4
1.9	Fill in form	Creation and transfer of profiles	2	1.5
1.10	Fill in form	Creation and transfer of profiles	1	1.3
1.11	Fill in form	Creation and transfer of profiles	1	1.2
1.12	Fill in form	Creation and transfer of profiles	1	1.2

1.13	Fill in form	Creation and transfer of profiles	1	
2	Search carer	Directory of carers	1	
2.1	Search carer	Directory of carers	1	1.6
2.2	Search carer	Directory of carers	1	1.6
2.3	Search carer	Directory of carers	1	1.6
2.4	Search carer	Directory of carers	1	
3	Search carer/contact carer	Directory of carers	1	
3.1	Search carer/contact carer	Directory of carers	1	1.7
3.2	Search carer/contact carer	Directory of carers	1	1.7
3.3	Search carer/contact carer	Directory of carers	1	1.5, 1.15
4	Use decision tree	Decision tree	1	1.8
4.1	Use decision tree	Decision tree	1	1.8
4.2	Use decision tree	Decision tree	1	1.8
4.3	Use decision tree	Decision tree	1	1.8
4.4	Use decision tree	Decision tree	4	1.9
5	Search database	Browsing of profiles	2	
5.1	Search database	Browsing of profiles	2	1.10
5.2	Search database	Browsing of profiles	2	1.10
5.3	Search database	Browsing of profiles	2	1.10
5.4	Search database	Browsing of profiles	2	2.2
5.5	Search database	Browsing of profiles	4	1.10
6	Manage member	Account management	1	
6.1	Manage member	Account management	1	
6.2	Manage member	Account management	1	1.11
6.3	Manage member	Account management	1	1.11
6.4	Manage member	Account management	1	1.11
6.4.1	Manage member	Account management	1	1.11

6.4.2	Manage member	Account management	1	1.11
6.5	Manage member	Account management	1	1.11
7		Login and registration	1	1.12
7.1		Login and registration	1	1.12
8		Login and registration	1	1.12
8.1		Login and registration	1	1.12
9			1	
10		Account management	1	1.3, 1.12
11	Search database		3	1.5, 1.6
12			1	
12.1			1	
12.2			1	2.1
12.3			1	2.1
12.3.1			1	2.1
13			1	
14			2	2.1
14.1			2	2.1
15			1	1.13
15.1			1	1.13
15.2			1	1.13
15.3			1	2.3
16			2	
16.1			3	
17			2	1.13
18			4	1.13
18.1			4	1.14
19			1	
20			2	
20.1			3	
21			5	
21.1			5	
21.2			5	
22			5	
23			5	

6. Assumptions

- The Sydney Wildlife Rescue and Care App will have IT support staff
- The SWRCA should not require any additional software or hardware for it to function
- Some requirements in the Requirements Traceability Matrix cannot be associated with any specific use case
- Sydney Wildlife members can use a smart phone or a computer
- Sydney Wildlife members has access to the internet
- SWRCA will only be available to current Sydney Wildlife members
- All users can understand English