

Software Engineering Group 11

SE_11_TS

Test Specification

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Configuration Ref: SE_11_TS

Date: 2014-11-14

Version: 1.0

Status: Release

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SY23 3DB

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1. Introduction

1.1. Purpose of Document

The purpose of this document is to provide a comprehensive guide to the tests we will carry out on the website, android and database throughout the build and the complete system at the end of the build.

1.2. Scope

This document aims to be a brief but detailed document listing our test specifications for the website, android and database throughout the build and the complete system at the end of the build.

1.3. Objectives

This document covers:

- The Website Test Specification
- The Database Test Specification
- The Android Test Specification
- The Final System Test Specification

1.4. Documents Included

This Test Specification has been derived from the following documents

- SE.QA.RS – Requirement Specification^[1]
- SE_11_PP – Project Plan^[2]
- SE_11_TS_01 – Android Test Specification^[3]
- SE_11_TS_02 – Database Test Specification^[4]
- SE_11_TS_03 – System Test Specification^[5]
- SE_11_TS_04 – Website Test Specification^[6]

2. Android Test Specification

2.1. Introduction

The Android Test Specification has been created by elo9, als48, qiz and jas78 they derived these tests using the documentation provided by the client, SE.QA.RS and also the groups own Project Plan documentation SE_11_PP. These tests offer a comprehensive test specification of the Android Application and its fields and ability to send data and ensure the UI works as needed.

2.2. Recordings and Species Module testing

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-001	FR2	Test a valid phone number for a recorder.	01234564854	Phone number is accepted when sent to the database.	No errors or warnings are produced.
SE-F-002	FR2	Test a phone number that contains characters.	01a23d65845	Phone number is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the phone number is invalid due to characters.
SE-F-003	FR2	Test a phone number that contains special characters.	215!254@*90	Phone number is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the phone number is invalid due to special characters.
SE-F-004	FR2	Test a valid date.	06/11/2014	The date is accepted and sent to the database.	No warnings or errors are produced.

SE-F-005	FR2	Test a historic date.	06/11/1900	The date is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the date is too far in the past.
SE-F-006	FR2	Test a date in the future.	A date further in the future of the current date	The date is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the date cannot be in the future.
SE-F-007	FR3	Test a valid species from the list.	Search for a valid species that exists within the database.	The species is accepted when the user submits the data.	No warnings or errors are produced.
SE-F-008	FR3	Search for a species that does not exist.	Search for '\$FS465bth'	No results will be returned.	A message will alert the user that no matching results were obtained. A prompt to add a new species will appear.
SE-F-009	FR3	Test a valid unique species can be added.	Attempt to add a new valid species.	The new species will be added to the database when submitted.	No warning or error message will be displayed to the user as the data is valid.
SE-F-010	FR3	Test that a repeat of a species cannot be entered.	Attempt to add a new valid species that already exists in the database.	The new species will not be added to the database.	An error will be displayed to the user alerting them to the fact a duplicate of this species already exists.
SE-F-011	FR4	Test a valid abundance character.	'A'	The character is accepted as valid on submission and sent to the database.	No error message or warning is produced for the valid character.

SE-F-012	FR4	Test an invalid abundance character.	'Z'	The character will be rejected when the user attempts to submit data.	An error is displayed to the user alerting them that the abundance character is invalid.
SE-F-013	FR4	Test multiple characters in the abundance field.	'FA'	The character will be rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that only one character can be entered into the abundance field.
SE-F-014	FR4	Test no entry in the free text comment area.	Enter no data to the free text area.	On submission the data will be sent to the database.	No warning or error messages will be displayed for the valid entry.
SE-F-015	FR4	Test a valid entry in the free text comment area.	Enter more than 0 and less than 256 characters.	On submission the data will be sent to the database.	No warning or error message will be displayed for the valid entry.
SE-F-016	FR4	Test a comment that is more than the maximum number of valid characters in the free text comment field.	Enter more than 256 characters in the free text comment field.	The data will be rejected when the user attempts to submit the data.	An error message will alert the user to the fact that the free comment box is only able to take a comment of 256 characters or less.
SE-F-017	FR4	Testing the camera is loaded when the scene camera icon is pressed.	Press the scene camera icon.	The screen is switched to camera output.	The user can take a picture with the camera which is then saved.

SE-F-018	FR4	Testing the camera is loaded when the plant camera icon is pressed.	Press the plant camera icon.	The screen is switched to camera output.	The user can take a picture with the camera which is then saved.
SE-F-019	FR5	Testing a recording can be deleted.	Select a recording and press delete.	The recording will no longer be displayed in the list.	The database will no longer contain the recording that was deleted.
SE-F-020	FR5	Test a whole species can be deleted.	Select a pre-existing species and press delete.	The recording will no longer be displayed in the list.	The database will no longer contain the recording that was deleted.
SE-F-021	FR5	Change the abundance of a species.	Select a pre-existing species and change the abundance to a valid abundance.	The species will now be updated with the new abundance.	The database will be updated to match the new information given on submission.
SE-F-022	FR5	Change the abundance of a species to a non-valid abundance.	Select a pre-existing species and change the abundance to a non-valid abundance.	When the user submits the change the change is rejected.	An error message is produced alerting the user that the input for abundance is not valid.
SE-F-023	FR5	Change the typical location for a species.	Select a pre-existing species and change the pre-existing location to a new valid location.	The species record will be updated with the new value for typical location.	No errors or warning messages are produced as the data is valid.
SE-F-024	FR5	Change the image of a species (plant).	Select a pre-existing species and change the plant image to a valid image.	The species plant image will be updated with the new image.	The database will be updated to match the new information given on submission.

SE-F-025	FR5	Change the image of a species (scene).	Select a pre-existing species and change the scene input to a valid image.	The species scene image will be updated with the new image.	The database will be updated to match the new information given on submission.
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2.3. Functionality

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-026	FR3	Search for a certain plant in the database	Enter a plant name that is in the database	A drop down list containing plant searched for	If plant appears in drop down list
SE-F-027	FR3	Search for a plant alphabetically	Enter the first letter or couple of letters	A drop down list populated with plants that match letter(s) going from common to rare	If first letter(s) match those of first letter(s) of plants in drop down list
SE-F-028	FR3	Search for a plant not in the database	Enter a plant name that is not in the database	A drop down list with option to add new plant	If add new plant option appears in drop down
SE-F-029	FR5	Display entries according to date	Test database of entries. Two with same day & month, two with same month & year, two with same day & year and two completely same dates	Display entries going from closest date then progressing back to oldest recorded record	If entries are grouped by year and month
SE-F-030	PR1	GPS is turned off when app is closed/goes inactive (If GPS is only to be active when app is)	App is closed/goes inactive	Phone GPS is deactivated	If phone settings show GPS is off after app use

SE-F-031	FR4	Search for a certain reserve in the database	Enter a reserve name that is in the database	A drop down list containing reserve searched for	If reserve appears in drop down list
SE-F-032	FR4	Search for a reserve alphabetically	Enter the first letter or couple of letters	A drop down list populated with reserves that match letter(s)	If first letter(s) match those of first letter(s) of reserves in drop down list
SE-F-033	FR4	Search for a reserve not in the database	Enter a reserve that is not in the database	A drop down list stating unable to locate reserve	If unable to find reserve appears for the user
SE-F-034	FR4	When a picture is taken that the GPS coordinates are recorded	Take a picture	GPS coordinates are entered into field to be sent	If record contains GPS coordinates
SE-F-035	FR2, FR8, FR9	Test logon id validation with one in user database	Enter e-mail of member on system	Proceed to password validation	Logon id is confirmed to be a user in database
SE-F-036	FR2, FR8, FR9	Test logon id validation with one not in user database	Enter e-mail of a non-member	Display 'unable to recognize logon/ password'	Logon id is confirmed as not in user database
SE-F-037	FR2, FR8, FR9	Test if correct password is entered	Enter correct password for logon id	Proceed to next screen	Password matches password linked to Logon id
SE-F-038	FR2, FR8, FR9	Test if an incorrect password is detected	Enter incorrect password for logon id	Display 'unable to recognize logon/ password'	If password is confirmed as not matching password linked to Logon id

SE-F-039	FR2, FR8, FR9	Test access level which is valid	Member's access level	Proceed to next screen	If access level is recognized as being greater than or equal to required level
SE-F-040	FR2, FR8, FR9	Test access level which is not valid	Member's access level	Display 'Access denied'	If access level is recognized as being less than required level
SE-F-041	FR5	Test if any entries are on your phone	Request list of previous entries with no entries	Display 'Not previous entries currently stored'	If displays message for user as no entries to display
SE-F-042	PR1	Test if user notified they can upload with WiFi connection made (only if that is their upload option)	Phone connects to WiFi while app is active	Upload icon lights up	If Icon changes and setting is for WiFi
SE-F-043	PR1	Test if user notified they can upload with signal at a good strength to ensure transition (only if that is their upload option)	Phone signal is at or above a certain strength while app is active	Upload icon lights up	If Icon changes and setting is for using phone's signal
SE-F-044	PR1	Test if user notified they can upload with WiFi when no connection is made (only for WiFi upload option)	Phone signal is at or above a certain strength while app is active	Upload icon does not light up	If Icon does not change and setting is for WiFi

2.4. UI

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-045	EIR1	Main Menu - The upload viewers change based on the record state	The record is in the local Database	Button should be red	Has to be red,
SE-F-046	EIR1	Main Menu - The upload viewers change based on the record state	The record is being uploaded	Button should change to orange	Needs to change to orange.
SE-F-047	EIR1	Main Menu - The upload viewers change based on the record state	The record has uploaded, stays for 5 minutes	The button changed to green, and disappears after 5 minutes	Needs to change and disappear in that time provided.
SE-F-048	EIR1	Record screen - Image select screen	Swipe right on the image select	Image swipe option correctly switches between image modes	The state is switched.
SE-F-049	EIR1	Record Screen - Reset button works correctly	The button is pressed	The data entry forms are cleared	They are cleared correctly

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-050	EIR1, PR2	Main menu - Scaling to different screen sizes works correctly	Application is tested on larger screen	The buttons and icons scale correctly and the positions are relative to screen size	The buttons looks correctly scaled.
SE-F-051	EIR1, PR2	Main menu - Scaled to tablet size	Opened on tablet	All controls are scaled up for tablets and works correctly	Application must have all controls scale up appropriately
SE-F-052	EIR1, PR2	Record Screen - Scaled to tablet size	Opened on a tablet	The buttons and image size are scaled correctly	Needs to be scaled correctly without any errors with resolution or position
SE-F-053	EIR1	Main menu - Rotate to landscape	Rotated the device to landscape.	The elements rotate and resize to fit the screen more appropriately	Needs to resize and reposition elements correctly
SE-F-054	EIR1	Record Screen - Rotate to landscape	Rotated the device to landscape.	The elements of the screen rotate and resize to fit the screen, this includes the image selector.	Needs to resize correctly and the image has to resize

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-055	EIR1	Main Menu - four navigation buttons must be in the correct location	Opened the application	The buttons are spaced evenly and are the same size	Have to be spaced evenly and are the same size
SE-F-056	EIR1	Main menu - Upload button checks	Opened the application	The upload buttons are spaced and positioned evenly	They're spaced evenly and are the same size
SE-F-057	EIR1	Main menu - Added recording to upload button	Added a recording to be displayed on the button display	The recording button is added to the end of the stack	Has to be added correctly to the display
SE-F-058	EIR1	Record Screen - GPS Screen disability	Turn off GPS	The GPS automatic entry should be disabled	Has to disable the controls once GPS is turned off

3. Database Test Specification

3.1. Introduction

The Database Specification has been created by kid10, alf33 and tor10 they derived these tests using the documentation provided by the client, SE.QA.RS and also the groups own Project Plan documentation SE_11_PP. These tests offer a comprehensive test specification of the database fields ensuring data can be stored and the tables link correctly.

3.2. Recordings Table

Test Ref	Req being tested	Test Content	Input	Output	Pass Criteria
SE-F-059	FR2,FR8	Check if the database can store a valid reserve_id	A valid reserve id such as 7 or 75 which has a corresponding reserve record	The reserve id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-060	FR2,FR8	Check if the database can store an invalid reserve_id	An invalid reserve id such as "reserve 51"	The reserve id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-061	FR2,FR8	Check if the database can store a valid user_id	A valid user id such as 3 or 22 which has a corresponding user record	The user id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-062	FR2,FR8	Check if the database can store an invalid user_id	An invalid user id such as "user 98"	The user id is not successfully stored and an error is given	Data is not stored and an error is given

3.3. Reserves Table

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-063	FR7	Check if database can store common reserve name	Name of the nature reserve	The database should store the newly entered reserve	Data is stored correctly without any problems
SE-F-064	FR7	Check if database can store common reserve name past the varchar limit	Enter a name of length greater than 50	The data entry should fail	Data should not appear in the database
SE-F-065	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of correct length and format	The database should store the reference	Data is stored correctly without any problems
SE-F-066	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of correct length but incorrect format	The data entry should be re-formatted and stored in the database	Data is stored correctly without any problems
SE-F-067	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of incorrect length and incorrect format	The data entry should fail	Data is not stored in the database
SE-F-068	FR8	Enter a textual description of the reserve	Text of length greater than 0	The database should store the description	Data is stored correctly without any problems
SE-F-069	FR8	Enter an empty description of the reserve	An empty string	The data entry should fail	Data is not stored in the database

3.4. Species Table

Test Ref	Req being Tested	Test Content	Input	Output	Pass Criteria
SE-F-070	FR7	Check if database can store common name.	Enter the common name of the Species e.g. European Silver-fir	The database should store the newly entered species.	Data is stored correctly without any problems
SE-F-071	FR7	Check if database can store a common name past the varchar (50) limit.	Enter a common name of the species which is beyond the 50 character limit.	The data entered into the database should fail.	Data should not appear in the database
SE-F-072	FR7	Check if database can store Latin name.	Enter the Latin name of the Species e.g. Abies alba Mill	The database should store the newly entered species.	Data is stored correctly without any problems
SE-F-073	FR7	Check if database can store a Latin name past the varchar (100) limit.	Enter a Latin name of the species which is beyond the 100 character limit.	The data entered into the database should fail.	Data should not appear in the database
SE-F-074	FR7	Check if database adds a timestamp every time a new row gets created or updated	Add a new species to the database	A time stamp should be automatically created in the database.	Timestamp should be created with the right time.

3.5. Species Occurrence Table

Test Ref	Req being tested	Test Content	Input	Output	Pass Criteria
SE-F-075	FR7	Check if the database can store a valid species_id	A valid species id such as 2 or 24 which has a corresponding species record	The species id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-076	FR7	Check if the database can store an invalid species_id	An invalid species id such as "species 123"	The species id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-077	FR7	Check if the database can store a valid recording_id	A valid recording id such as 5 or 47 which has a corresponding recording record	The recording id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-078	FR7	Check if the database can store an invalid recording_id	An invalid recording id such as "recording 34"	The recording id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-079	FR7	Check if the database can store a valid longitude	A valid longitude such as 52° 24' 55.0908"	The longitude is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-080	FR7	Check if the database can store an invalid longitude	An invalid longitude which exceeds the 20 character limit	The longitude stored but is truncated	Data is only partly stored and a warning is given regarding truncation

SE-F-081	FR7	Check if the database can store a valid latitude	A valid latitude such as -4° 4' 58.5114"	The latitude is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-082	FR7	Check if the database can store an invalid latitude	An invalid latitude which exceeds the 20 character limit	The latitude is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-083	FR7	Check if the database can store a valid abundance	A valid abundance which is either 'D', 'A', 'F', 'O' or 'R'	The abundance is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-084	FR7	Check if the database can store an invalid abundance	An invalid abundance such which is not in the enum such as "lots"	The abundance is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-085	FR7	Check if the database can store a valid comment	A valid comment such as "plenty of this species in this area"	The comment is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-086	FR7	Check if the database can store an invalid comment	An invalid comment which exceeds the limit of the text type. ($L + 2$ bytes, where $L < 2^{16}$) [1]	The comment is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-087	FR7	Check if the database can store a valid general photo	A valid general photo such as "img0029.jpg"	The general photo is successfully stored in the relevant row	Data is stored correctly without errors or warnings

SE-F-088	FR7	Check if the database can store an invalid general photo	An invalid general photo which exceeds the 255 character limit	The general photo is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-089	FR7	Check if the database can store a valid specimen photo	An valid specimen photo such as "img0103.jpeg"	The specimen photo is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-090	FR7	Check if the database can store an invalid specimen photo	An invalid specimen photo which exceeds the 255 character limit	The specimen photo is stored but is truncated	Data is only partly stored and a warning is given regarding truncation

3.6. Users Table

Test Ref	Req being tested	Test Content	Input	Output	Pass Criteria
SE-F-091	FR7	Check if the database can store a valid email	A valid email such as "kid10@aber.ac.uk"	The email is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-092	FR7	Check if the database can store an invalid email	An invalid email which exceeds the 254 character limit	The email is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-093	FR7	Check if the database can store a valid password	A valid password such as an encrypted version of "pass1234"	The password is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-094	FR7	Check if the database can store an invalid password	An invalid password which exceeds the 255 character limit	The password is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-095	FR7	Check if the database can store a valid name	A valid name such as "Joe Bloggs"	The name is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-096	FR7	Check if the database can store an invalid name	An invalid name which exceeds the 50 character limit	The name is stored but is truncated	Data is only partly stored and a warning is given regarding truncation

SE-F-097	FR7	Check if the database can store a valid phone number	A valid phone number such as 0123456789	The phone number is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-098	FR7	Check if the database can store an invalid phone number	An invalid phone number which exceeds the 25 character limit	The phone number is stored but is truncated	Data is only partly stored and a warning is given regarding truncation

4. Web Test Specification

4.1. Introduction

The Website Specification has been created by gar18, rhc15, alf33 and tor10 they derived these tests using the documentation provided by the client, SE.QA.RS and also the groups own Project Plan documentation SE_11_PP. These tests offer a comprehensive test specification of the Website fields and pages ensuring data can be entered and pages all link together and the server receives and stores data in the database as needed.

4.2. FR7 – Server Receives Recording

Test ref	Req being tested	Test content	Input	Output	Pass criteria
SE-F-099	FR7	Server receives transmissions of recordings and stores them in the database.	A record is transmitted to the server and stored in the database.	Server receives the input and then stores it in the database correctly.	New recording is in the database.
SE-F-100	FR7	User X is authenticated	User name and password.	User name will display in the 'You' page. The server knows the user is in session.	Correct user name is displayed. Correct user data is displayed.
SE-F-101	FR7	User is authorised to access the website.	User name and password.	User is logged into the site.	User X has access to the web app.

4.3. FR8 – Addition and Maintenance of Reserves

SE-F-102	FR8	Create/Update Reserve Name with a valid name	Aber	Name is accepted and saved into the database	Aber is displayed with no errors or warnings
SE-F-103	FR8	Create/Update Reserve Name with numbers	1476	Name is rejected and not saved	An error appears alerting the user that numbers are not allowed
SE-F-104	FR8	Create/Update Reserve Name with 50 characters (Upper Boundary)	Aberystwyth reserve of nature and plants and trees	Name is accepted and saved into the database	Aberystwyth reserve of nature and plants and trees is displayed with no errors or warnings
SE-F-105	FR8	Create/Update Reserve Name with 50 characters	Aberystwyth reserve of nature plants biology study	Name is rejected and not saved	An error appears alerting the user that they have gone over the character limit
SE-F-106	FR8	Create/Update Reserve Name with 4 characters (Lower Boundary)	Aber	Name is accepted and saved into the database	Aber is displayed with no errors or warnings

SE-F-107	FR8	Create/Update Reserve Name with 3 characters	abe	Name is rejected and not saved	An error appears alerting the user that they have not entered enough characters
SE-F-108	FR8	Delete Reserve	Press Delete	The Reserve Is deleted	The record of the reserve is no longer on the database
SE-F-109	FR8	Check if there are duplicate names or if name is saved	User inputs a name and make sure there are no duplicates.	The name is displayed and stored in the database	Name is displayed without any duplicates
SE-F-110	FR8	Create/Update Reserve Location that is valid	20.534, 50.435	Location is accepted and saved into the database	20.534, 50.435 is displayed with no errors or warnings
SE-F-111	FR8	Create/Update Reserve Location with characters	3kfm , 34jdd	Location is rejected and not saved	An error appears alerting the user that they can't use Alphabetical characters
SE-F-112	FR8	Create/Update Reserve Location with 20 Characters (Upper Boundary)	304.22581, 250.14858	Location is accepted and saved into the database	304.22581, 250.14858 Is displayed with no errors or warnings

SE-F-113	FR8	Create/Update Reserve Location with 21 characters	254.21687, 145.257894	Location is rejected and not saved	An error appears alerting the user that they have gone over the character limit
SE-F-114	FR8	Create/Update Reserve Location with 3 characters (Lower Boundary)	3,6	Location is accepted and saved into the database	3,6 Is displayed with no errors or warnings
SE-F-115	FR8	Create/Update Reserve Location with 2 characters	3,	Location is rejected and not saved	An error appears alerting the user that they have not entered enough characters
SE-F-116	FR8	Textual description	Description can be edited and updated	Description will appear for the species.	Data is appeared correctly

4.4. FR9 – Browsing Species Records

SE-F-117	FR9	Check if species found at a particular reserve can be displayed	Name of reserve e.g. Coed Rhiedol National Nature Reserve	Species that have been found at that reserve	All species that are found at the nature reserve are displayed
SE-F-118	FR9	Check if species found at a reserve that does not exist can be displayed	Name of a reserve that does not exist e.g. abc	An error message should be shown	No records should be shown
SE-F-119	FR9	Check if data can be displayed in alphabetical order of Latin name	A list of unsorted data	List of results ordered by their Latin name	Species are ordered A-Z
SE-F-120	FR9	Check if data can be displayed in reverse alphabetical order of Latin name	A list of unsorted data	List of results ordered by their Latin name	Species are ordered Z-A
SE-F-121	FR9	Check if a record with a particular date can be displayed	A record recorded on the current date	The record is displayed	The record from the date is displayed
SE-F-122	FR9	Check if the earliest recording can be displayed	A record recorded on 1 st January 1990	The record is displayed	The earliest recording is displayed
SE-F-123	FR9	Check if a recording dated before the earliest entry date can be displayed	A record recorded before 1 st January 1990	The record is not displayed	The recording taken before 1 st January 1990 is not shown
SE-F-124	FR9	Check if the latest recording can be displayed	A record recorded on 31 st December 2050	The record is displayed	The latest recording is displayed

SE-F-125	FR9	Check if a recording dated after the latest entry date can be displayed	A record recorded after 31 st December 2050	The record is not displayed	The recording taken after 31 st December 2050 is not shown
SE-F-126	FR9	Check if records can be ordered by date	A list of unsorted data	Full list of sorted results	List is ordered by date (newest to oldest)
SE-F-127	FR9	Check if records can be reverse-ordered by date	A list of unsorted data	Full list of sorted results	List is ordered by date (oldest to newest)

4.5. EIR – External Interface Requirements

SE-F-128	EIR1	Check if user is able to navigate the application with minimal training	A new user using the web application for the first time	Feedback from the user about their experience	Positive feedback from the user
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4.6. PR – Performance Requirements

SE-F-129	PR1	Check if user input is responded to within a second by the application	Input from the user	Changes to data displayed	Changes are shown within a certain amount of time
SE-F-130	PR2	Check if software runs as expected on supported systems	Application used on web browsers used by the university	Application displays information requested by the user	Application and its components work correctly

5. System Test Specification

5.1. Introduction

The System Test Specification has been created by tcg2 and add20 they derived these tests using the documentation provided by the client, SE.QA.RS and also the groups own Project Plan documentation SE_11_PP. These tests are a compilation of all the other test specification to be conducted at the end of the build by the QA (add20) and DQA (tcg2). The tests offer a comprehensive test specification of the entire system once the build has been completed it will test every aspect of the system from the website to the android and database to ensure the entire system works in compilation.

5.2. Android Table

5.2.1. Recordings and Species Module testing

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-131	FR2	Test a valid phone number for a recorder.	01234564854	Phone number is accepted when sent to the database.	No errors or warnings are produced.
SE-F-132	FR2	Test a phone number that contains characters.	01a23d65845	Phone number is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the phone number is invalid due to characters.
SE-F-133	FR2	Test a phone number that contains special characters.	215!254@*90	Phone number is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the phone number is invalid due to special characters.
SE-F-134	FR2	Test a valid date.	06/11/2014	The date is accepted and sent to the database.	No warnings or errors are produced.

SE-F-135	FR2	Test a historic date.	06/11/1900	The date is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the date is too far in the past.
SE-F-136	FR2	Test a date in the future.	A date further in the future of the current date	The date is rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that the date cannot be in the future.
SE-F-137	FR3	Test a valid species from the list.	Search for a valid species that exists within the database.	The species is accepted when the user submits the data.	No warnings or errors are produced.
SE-F-138	FR3	Search for a species that does not exist.	Search for '\$FS465bth'	No results will be returned.	A message will alert the user that no matching results were obtained. A prompt to add a new species will appear.
SE-F-139	FR3	Test a valid unique species can be added.	Attempt to add a new valid species.	The new species will be added to the database when submitted.	No warning or error message will be displayed to the user as the data is valid.
SE-F-140	FR3	Test that a repeat of a species cannot be entered.	Attempt to add a new valid species that already exists in the database.	The new species will not be added to the database.	An error will be displayed to the user alerting them to the fact a duplicate of this species already exists.
SE-F-141	FR4	Test a valid abundance character.	'A'	The character is accepted as valid on submission and sent to the database.	No error message or warning is produced for the valid character.

SE-F-142	FR4	Test an invalid abundance character.	'Z'	The character will be rejected when the user attempts to submit data.	An error is displayed to the user alerting them that the abundance character is invalid.
SE-F-143	FR4	Test multiple characters in the abundance field.	'FA'	The character will be rejected when the user attempts to submit the data.	An error is displayed to the user alerting them that only one character can be entered into the abundance field.
SE-F-144	FR4	Test no entry in the free text comment area.	Enter no data to the free text area.	On submission the data will be sent to the database.	No warning or error messages will be displayed for the valid entry.
SE-F-145	FR4	Test a valid entry in the free text comment area.	Enter more than 0 and less than 256 characters.	On submission the data will be sent to the database.	No warning or error message will be displayed for the valid entry.
SE-F-146	FR4	Test a comment that is more than the maximum number of valid characters in the free text comment field.	Enter more than 256 characters in the free text comment field.	The data will be rejected when the user attempts to submit the data.	An error message will alert the user to the fact that the free comment box is only able to take a comment of 256 characters or less.
SE-F-147	FR4	Testing the camera is loaded when the scene camera icon is pressed.	Press the scene camera icon.	The screen is switched to camera output.	The user can take a picture with the camera which is then saved.

SE-F-148	FR4	Testing the camera is loaded when the plant camera icon is pressed.	Press the plant camera icon.	The screen is switched to camera output.	The user can take a picture with the camera which is then saved.
SE-F-149	FR5	Testing a recording can be deleted.	Select a recording and press delete.	The recording will no longer be displayed in the list.	The database will no longer contain the recording that was deleted.
SE-F-150	FR5	Test a whole species can be deleted.	Select a pre-existing species and press delete.	The recording will no longer be displayed in the list.	The database will no longer contain the recording that was deleted.
SE-F-151	FR5	Change the abundance of a species.	Select a pre-existing species and change the abundance to a valid abundance.	The species will now be updated with the new abundance.	The database will be updated to match the new information given on submission.
SE-F-152	FR5	Change the abundance of a species to a non-valid abundance.	Select a pre-existing species and change the abundance to a non-valid abundance.	When the user submits the change the change is rejected.	An error message is produced alerting the user that the input for abundance is not valid.
SE-F-153	FR5	Change the typical location for a species.	Select a pre-existing species and change the pre-existing location to a new valid location.	The species record will be updated with the new value for typical location.	No errors or warning messages are produced as the data is valid.

SE-F-154	FR5	Change the image of a species (plant).	Select a pre-existing species and change the plant image to a valid image.	The species plant image will be updated with the new image.	The database will be updated to match the new information given on submission.
SE-F-155	FR5	Change the image of a species (scene).	Select a pre-existing species and change the scene input to a valid image.	The species scene image will be updated with the new image.	The database will be updated to match the new information given on submission.

5.2.2. Functionality

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-156	FR3	Search for a certain plant in the database	Enter a plant name that is in the database	A drop down list containing plant searched for	If plant appears in drop down list
SE-F-157	FR3	Search for a plant alphabetically	Enter the first letter or couple of letters	A drop down list populated with plants that match letter(s) going from common to rare	If first letter(s) match those of first letter(s) of plants in drop down list
SE-F-158	FR3	Search for a plant not in the database	Enter a plant name that is not in the database	A drop down list with option to add new plant	If add new plant option appears in drop down
SE-F-159	FR5	Display entries according to date	Test database of entries. Two with same day & month, two with same month & year, two with same day & year and two completely same dates	Display entries going from closest date then progressing back to oldest recorded record	If entries are grouped by year and month

SE-F-160	PR1	GPS is turned off when app is closed/goes inactive (If GPS is only to be active when app is)	App is closed/goes inactive	Phone GPS is deactivated	If phone settings show GPS is off after app use
SE-F-161	FR4	Search for a certain reserve in the database	Enter a reserve name that is in the database	A drop down list containing reserve searched for	If reserve appears in drop down list
SE-F-162	FR4	Search for a reserve alphabetically	Enter the first letter or couple of letters	A drop down list populated with reserves that match letter(s)	If first letter(s) match those of first letter(s) of reserves in drop down list
SE-F-163	FR4	Search for a reserve not in the database	Enter a reserve that is not in the database	A drop down list stating unable to locate reserve	If unable to find reserve appears for the user
SE-F-164	FR4	When a picture is taken that the GPS coordinates are recorded	Take a picture	GPS coordinates are entered into field to be sent	If record contains GPS coordinates
SE-F-165	FR2, FR8, FR9	Test logon id validation with one in user database	Enter e-mail of member on system	Proceed to password validation	Logon id is confirmed to be a user in database
SE-F-166	FR2, FR8, FR9	Test logon id validation with one not in user database	Enter e-mail of a non-member	Display 'unable to recognize logon/ password'	Logon id is confirmed as not in user database
SE-F-167	FR2, FR8, FR9	Test if correct password is entered	Enter correct password for logon id	Proceed to next screen	Password matches password linked to Logon id

SE-F-168	FR2, FR8, FR9	Test if an incorrect password is detected	Enter incorrect password for logon id	Display 'unable to recognize logon/ password'	If password is confirmed as not matching password linked to Logon id
SE-F-169	FR2, FR8, FR9	Test access level which is valid	Member's access level	Proceed to next screen	If access level is recognized as being greater than or equal to required level
SE-F-170	FR2, FR8, FR9	Test access level which is not valid	Member's access level	Display 'Access denied'	If access level is recognized as being less than required level
SE-F-171	FR5	Test if any entries are on your phone	Request list of previous entries with no entries	Display 'Not previous entries currently stored'	If displays message for user as no entries to display
SE-F-172	PR1	Test if user notified they can upload with WiFi connection made (only if that is their upload option)	Phone connects to WiFi while app is active	Upload icon lights up	If Icon changes and setting is for WiFi
SE-F-173	PR1	Test if user notified they can upload with signal at a good strength to ensure transition (only if that is their upload option)	Phone signal is at or above a certain strength while app is active	Upload icon lights up	If Icon changes and setting is for using phone's signal

SE-F-174	PR1	Test if user notified they can upload with WiFi when no connection is made (only for WiFi upload option)	Pho signal is at or above a certain strength while app is active	Upload icon does not light up	If Icon does not change and setting is for WiFi
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5.2.3. UI

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-175	EIR1	Main Menu - The upload viewers change based on the record state	The record is in the local Database	Button should be red	Has to be red,
SE-F-176	EIR1	Main Menu - The upload viewers change based on the record state	The record is being uploaded	Button should change to orange	Needs to change to orange.
SE-F-177	EIR1	Main Menu - The upload viewers change based on the record state	The record has uploaded, stays for 5 minutes	The button changed to green, and disappears after 5 minutes	Needs to change and disappear in that time provided.
SE-F-178	EIR1	Record screen - Image select screen	Swipe right on the image select	Image swipe option correctly switches between image modes	The state is switched.
SE-F-179	EIR1	Record Screen - Reset button works correctly	The button is pressed	The data entry forms are cleared	They are cleared correctly

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-180	EIR1, PR2	Main menu - Scaling to different screen sizes works correctly	Application is tested on larger screen	The buttons and icons scale correctly and the positions are relative to screen size	The buttons looks correctly scaled.
SE-F-181	EIR1, PR2	Main menu - Scaled to tablet size	Opened on tablet	All controls are scaled up for tablets and works correctly	Application must have all controls scale up appropriately
SE-F-182	EIR1, PR2	Record Screen - Scaled to tablet size	Opened on a tablet	The buttons and image size are scaled correctly	Needs to be scaled correctly without any errors with resolution or position
SE-F-183	EIR1	Main menu - Rotate to landscape	Rotated the device to landscape.	The elements rotate and resize to fit the screen more appropriately	Needs to resize and reposition elements correctly
SE-F-184	EIR1	Record Screen - Rotate to landscape	Rotated the device to landscape.	The elements of the screen rotate and resize to fit the screen, this includes the image selector.	Needs to resize correctly and the image has to resize
SE-F-185	EIR1	Main Menu - four navigation buttons must be in the correct location	Opened the application	The buttons are spaced evenly and are the same size	Have to be spaced evenly and are the same size

Test Ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-186	EIR1	Main menu - Upload button checks	Opened the application	The upload buttons are spaced and positioned evenly	They're spaced evenly and are the same size
SE-F-187	EIR1	Main menu - Added recording to upload button	Added a recording to be displayed on the button display	The recording button is added to the end of the stack	Has to be added correctly to the display
SE-F-188	EIR1	Record Screen - GPS Screen disability	Turn off GPS	The GPS automatic entry should be disabled	Has to disable the controls once GPS is turned off

5.3. Database Table

5.3.1. Recordings Table

Test Ref	Req. being tested	Test Content	Input	Output	Pass Criteria
SE-F-189	FR2,FR8	Check if the database can store a valid reserve_id	A valid reserve id such as 7 or 75 which has a corresponding reserve record	The reserve id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-190	FR2,FR8	Check if the database can store an invalid reserve_id	An invalid reserve id such as "reserve 51"	The reserve id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-191	FR2,FR8	Check if the database can store a valid user_id	A valid user id such as 3 or 22 which has a corresponding user record	The user id is successfully stored in the relevant row	Data is stored correctly without errors or warnings

SE-F-192	FR2,FR8	Check if the database can store an invalid user_id	An invalid user id such as “user 98”	The user id is not successfully stored and an error is given	Data is not stored and an error is given
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5.3.2. Reserves Table

Test ref	Req. being tested	Test content	Input	Output	Pass criteria
SE-F-193	FR7	Check if database can store common reserve name	Name of the nature reserve	The database should store the newly entered reserve	Data is stored correctly without any problems
SE-F-194	FR7	Check if database can store common reserve name past the varchar limit	Enter a name of length greater than 50	The data entry should fail	Data should not appear in the database
SE-F-195	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of correct length and format	The database should store the reference	Data is stored correctly without any problems
SE-F-196	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of correct length but incorrect format	The data entry should be re-formatted and stored in the database	Data is stored correctly without any problems
SE-F-197	FR8	Enter an OS grid reference that corresponds to the location of the reserve	A grid reference of incorrect length and incorrect format	The data entry should fail	Data is not stored in the database
SE-F-198	FR8	Enter a textual description of the reserve	Text of length greater than 0	The database should store the description	Data is stored correctly without any problems
SE-F-199	FR8	Enter an empty description of the reserve	An empty string	The data entry should fail	Data is not stored in the database

5.3.3. Species Table

Test Ref	Req. being Tested	Test Content	Input	Output	Pass Criteria
SE-F-200	FR7	Check if database can store common name.	Enter the common name of the Species e.g. European Silver-fir	The database should store the newly entered species.	Data is stored correctly without any problems
SE-F-201	FR7	Check if database can store a common name past the varchar (50) limit.	Enter a common name of the species which is beyond the 50 character limit.	The data entered into the database should fail.	Data should not appear in the database
SE-F-202	FR7	Check if database can store Latin name.	Enter the Latin name of the Species e.g. Abies alba Mill	The database should store the newly entered species.	Data is stored correctly without any problems
SE-F-203	FR7	Check if database can store a Latin name past the varchar (100) limit.	Enter a Latin name of the species which is beyond the 100 character limit.	The data entered into the database should fail.	Data should not appear in the database
SE-F-204	FR7	Check if database adds a timestamp every time a new row gets created or updated	Add a new species to the database	A time stamp should be automatically created in the database.	Timestamp should be created with the right time.

5.3.4. Species Occurrence Table

Test Ref	Req. being tested	Test Content	Input	Output	Pass Criteria
SE-F-205	FR7	Check if the database can store a valid species_id	A valid species id such as 2 or 24 which has a corresponding species record	The species id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-206	FR7	Check if the database can store an invalid species_id	An invalid species id such as "species 123"	The species id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-207	FR7	Check if the database can store a valid recording_id	A valid recording id such as 5 or 47 which has a corresponding recording record	The recording id is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-208	FR7	Check if the database can store an invalid recording_id	An invalid recording id such as "recording 34"	The recording id is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-209	FR7	Check if the database can store a valid longitude	A valid longitude such as 52° 24' 55.0908"	The longitude is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-210	FR7	Check if the database can store an invalid longitude	An invalid longitude which exceeds the 20 character limit	The longitude stored but is truncated	Data is only partly stored and a warning is given regarding truncation

SE-F-211	FR7	Check if the database can store a valid latitude	A valid latitude such as -4° 4' 58.5114"	The latitude is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-212	FR7	Check if the database can store an invalid latitude	An invalid latitude which exceeds the 20 character limit	The latitude is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-213	FR7	Check if the database can store a valid abundance	A valid abundance which is either 'D', 'A', 'F', 'O' or 'R'	The abundance is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-214	FR7	Check if the database can store an invalid abundance	An invalid abundance such which is not in the enum such as "lots"	The abundance is not successfully stored and an error is given	Data is not stored and an error is given
SE-F-215	FR7	Check if the database can store a valid comment	A valid comment such as "plenty of this species in this area"	The comment is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-216	FR7	Check if the database can store an invalid comment	An invalid comment which exceeds the limit of the text type. ($L + 2$ bytes, where $L < 2^{16}$) [1]	The comment is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-217	FR7	Check if the database can store a valid general photo	A valid general photo such as "img0029.jpg"	The general photo is successfully stored in the relevant row	Data is stored correctly without errors or warnings

SE-F-218	FR7	Check if the database can store an invalid general photo	An invalid general photo which exceeds the 255 character limit	The general photo is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-219	FR7	Check if the database can store a valid specimen photo	An valid specimen photo such as "img0103.jpeg"	The specimen photo is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-220	FR7	Check if the database can store an invalid specimen photo	An invalid specimen photo which exceeds the 255 character limit	The specimen photo is stored but is truncated	Data is only partly stored and a warning is given regarding truncation

5.3.5. Users Table

Test Ref	Req. being tested	Test Content	Input	Output	Pass Criteria
SE-F-221	FR7	Check if the database can store a valid email	A valid email such as "kid10@aber.ac.uk"	The email is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-222	FR7	Check if the database can store an invalid email	An invalid email which exceeds the 254 character limit	The email is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-223	FR7	Check if the database can store a valid password	A valid password such as an encrypted version of "pass1234"	The password is successfully stored in the relevant row	Data is stored correctly without errors or warnings

SE-F-224	FR7	Check if the database can store an invalid password	An invalid password which exceeds the 255 character limit	The password is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-225	FR7	Check if the database can store a valid name	A valid name such as "Joe Bloggs"	The name is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-226	FR7	Check if the database can store an invalid name	An invalid name which exceeds the 50 character limit	The name is stored but is truncated	Data is only partly stored and a warning is given regarding truncation
SE-F-227	FR7	Check if the database can store a valid phone number	A valid phone number such as 0123456789	The phone number is successfully stored in the relevant row	Data is stored correctly without errors or warnings
SE-F-228	FR7	Check if the database can store an invalid phone number	An invalid phone number which exceeds the 25 character limit	The phone number is stored but is truncated	Data is only partly stored and a warning is given regarding truncation

5.4. Web Test Specification

5.4.1. FR7 – Server Receives Recording

Test ref	Req being tested	Test content	Input	Output	Pass criteria
SE-F-229	FR7	Server receives transmissions of recordings and stores them in the database.	A record is transmitted to the server and stored in the database.	Server receives the input and then stores it in the database correctly.	New recording is in the database.
SE-F-230	FR7	User X is authenticated	User name and password.	User name will display in the 'You' page. The server knows the user is in session.	Correct user name is displayed. Correct user data is displayed.
SE-F-231	FR7	User is authorised to access the website.	User name and password.	User is logged into the site.	User X has access to the web app.

5.4.2. FR8 – Addition and Maintenance of Reserves

SE-F-232	FR8	Create/Update Reserve Name with a valid name	Aber	Name is accepted and saved into the database	Aber is displayed with no errors or warnings
SE-F-234	FR8	Create/Update Reserve Name with numbers	1476	Name is rejected and not saved	An error appears alerting the user that numbers are not allowed

SE-F-235	FR8	Create/Update Reserve Name with 50 characters (Upper Boundary)	Aberystwyth reserve of nature and plants and trees	Name is accepted and saved into the database	Aberystwyth reserve of nature and plants and trees Is displayed with no errors or warnings
SE-F-236	FR8	Create/Update Reserve Name with 50 characters	Aberystwyth reserve of nature plants biology study	Name is rejected and not saved	An error appears alerting the user that they have gone over the character limit
SE-F-237	FR8	Create/Update Reserve Name with 4 characters (Lower Boundary)	Aber	Name is accepted and saved into the database	Aber is displayed with no errors or warnings
SE-F-238	FR8	Create/Update Reserve Name with 3 characters	abe	Name is rejected and not saved	An error appears alerting the user that they have not entered enough characters
SE-F-239	FR8	Delete Reserve	Press Delete	The Reserve Is deleted	The record of the reserve is no longer on the database
SE-F-240	FR8	Check if there are duplicate names or if name is saved	User inputs a name and make sure there are no duplicates.	The name is displayed and stored in the database	Name is displayed without any duplicates

SE-F-241	FR8	Create/Update Reserve Location that is valid	20.534, 50.435	Location is accepted and saved into the database	20.534, 50.435 is displayed with no errors or warnings
SE-F-242	FR8	Create/Update Reserve Location with characters	3kfm , 34jdd	Location is rejected and not saved	An error appears alerting the user that they can't use Alphabetical characters
SE-F-243	FR8	Create/Update Reserve Location with 20 Characters (Upper Boundary)	304.22581, 250.14858	Location is accepted and saved into the database	304.22581, 250.14858 Is displayed with no errors or warnings
SE-F-244	FR8	Create/Update Reserve Location with 21 characters	254.21687, 145.257894	Location is rejected and not saved	An error appears alerting the user that they have gone over the character limit
SE-F-245	FR8	Create/Update Reserve Location with 3 characters (Lower Boundary)	3,6	Location is accepted and saved into the database	3,6 Is displayed with no errors or warnings
SE-F-246	FR8	Create/Update Reserve Location with 2 characters	3,	Location is rejected and not saved	An error appears alerting the user that they have not entered enough characters
SE-F-247	FR8	Textual description	Description can be edited and updated	Description will appear for the species.	Data is appeared correctly

5.4.3. FR9 – Browsing Species Records

SE-F-248	FR9	Check if species found at a particular reserve can be displayed	Name of reserve e.g. Coed Rhiedol National Nature Reserve	Species that have been found at that reserve	All species that are found at the nature reserve are displayed
SE-F-249	FR9	Check if species found at a reserve that does not exist can be displayed	Name of a reserve that does not exist e.g. abc	An error message should be shown	No records should be shown
SE-F-250	FR9	Check if data can be displayed in alphabetical order of Latin name	A list of unsorted data	List of results ordered by their Latin name	Species are ordered A-Z
SE-F-251	FR9	Check if data can be displayed in reverse alphabetical order of Latin name	A list of unsorted data	List of results ordered by their Latin name	Species are ordered Z-A
SE-F-252	FR9	Check if a record with a particular date can be displayed	A record recorded on the current date	The record is displayed	The record from the date is displayed
SE-F-253	FR9	Check if the earliest recording can be displayed	A record recorded on 1 st January 1990	The record is displayed	The earliest recording is displayed
SE-F-254	FR9	Check if a recording dated before the earliest entry date can be displayed	A record recorded before 1 st January 1990	The record is not displayed	The recording taken before 1 st January 1990 is not shown
SE-F-255	FR9	Check if the latest recording can be displayed	A record recorded on 31 st December 2050	The record is displayed	The latest recording is displayed

SE-F-256	FR9	Check if a recording dated after the latest entry date can be displayed	A record recorded after 31 st December 2050	The record is not displayed	The recording taken after 31 st December 2050 is not shown
SE-F-257	FR9	Check if records can be ordered by date	A list of unsorted data	Full list of sorted results	List is ordered by date (newest to oldest)
SE-F-258	FR9	Check if records can be reverse-ordered by date	A list of unsorted data	Full list of sorted results	List is ordered by date (oldest to newest)

5.4.4. EIR – External Interface Requirements

SE-F-259	EIR1	Check if user is able to navigate the application with minimal training	A new user using the web application for the first time	Feedback from the user about their experience	Positive feedback from the user
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5.4.5. PR – Performance Requirements

SE-F-260	PR1	Check if user input is responded to within a second by the application	Input from the user	Changes to data displayed	Changes are shown within a certain amount of time
SE-F-261	PR2	Check if software runs as expected on supported systems	Application used on web browsers used by the university	Application displays information requested by the user	Application and its components work correctly

6. REFERENCES

- [1] – SE.QA.RS – Requirement Specification – N.W.Hardy
- [2] – SE_11_PP – Project Plan – Group 11
- [3] – SE_11_TS_01 – Android Test Specification – Group 11
- [4] – SE_11_TS_02 – Database Test Specification – Group 11
- [5] – SE_11_TS_03 – System Test Specification – Group 11
- [6] – SE_11_TS_04 – Website Test Specification – Group 11

7. DOCUMENT HISTORY

Version	CCF No.	Date	Changes made to document	Changed by
1.0	N/A	13/11/14	Document Created and Structured	Tcg2