Acceptance Test Plan

FRC Scout

Kristian Calhoun

Hannah Pinkos

Keith Horrocks

Ryan Hersh

Jirakit Songprasit

February 12, 2013

Revision 1.2

Acceptance Test Plan Revisions

Date	Description	Revision	Editor
February 6, 2013	Initial Draft	1.0	Kristian Calhoun, Hannah Pinkos, Keith Horrocks, Ryan Hersh, Jirakit Songprasit
March 21, 2013	Removed priority level 2 tasks. Replace instances of searching for a match/team with selecting a match/team from a drop down menu.	1.1	Kristian
March 22, 2013	Replace "Submit" button with "Save" button.	1.2	Kristian

Table of Contents

1. Introduction

1.1 Background

This document provides the plan for completing the acceptance test of the FRC Scout system. The included test cases were derived from the Software Requirement Specifications (see §1.2) for FRC Scout, which details the system's functionality.

FRC Scout allows users, who are members of a single FIRST Robotics Competition (FRC) team, to input data about the performance of each robot competing at a FRC event into a graphical user interface. The program then stores the information and computes simple statistics. The system then allows users to view the data in a graphical format and sort the information based on different user-selected criteria.

1.2 References

- **FRC Scout SRS**
  Calhoun, Kristian, Hannah Pinkos, Keith Horrocks, Ryan Hersh, and Jirakit Songprasit. "FRC Scout Software Requirements Specification." N.p., 11 Feb. 2013. Web. <https://github.com/Drexel-CS451-Winter2013-Group2/FRC-Scout/blob/master/Documentation/Software%20Requirements%20Specification.docx>.

- **FRC Scout GitHub Issue Tracking System**
  "FRC Scout Issue Tracking System." FRC Scout. GitHub, 1 Feb. 2013. Web. <https://github.com/Drexel-CS451-Winter2013-Group2/FRC-Scout/issues>.

1.3 Glossary

Administrator An administrator is a user with the "administrator" account privilege. In addition to the team member and scout user permissions, administrators can modify or delete any data in the system, add new events to the system, and manage user accounts.

Event An event is a single regional competition or championship division. Each event is defined by its date, name, and list of attending teams.

Match In the context of FRC Scout, a match refers to a single qualification match played at an event. Each match has a match number and matches are played sequentially at an event. A match can also be identified by the six teams playing in it.

Match Record A match record is a unique collection of data relevant to the game for a particular team in a particular match at a particular event.

Scout A scout is a user with the "scout" account privilege. In addition to having team member permissions, a scout can also input new data into the system or modify previously entered data.

Software Requirements Specification (SRS) A Software Requirements Specification is a document containing the complete description of the behavior of a system.

Team A team refers to a group of people who field a single robot at an event. All teams are assigned an official, permanent team number upon registering for the FIRST Robotics Competition. Each team also has a team nickname by which it can be recognized.

Test Case A test case is an atomic test description including preconditions that must be satisfied before the test is performed, the actions a tester will take when performing the test, and the expected postconditions that will ensure the system has completed the expected behavior.

Toolbar The toolbar on the FRC Scout website is a persistent horizontal menu of links located beneath the site's header.

Ultimate Ascent Ultimate Ascent is the name of the 2013 FIRST Robotics Competition (FRC) game.

Unit Tests Unit tests are a collection of small code snippets that each test a single atomic module of the source code to ensure its proper functioning.

User A user is a person who owns an account in the FRC Scout system.

2. Test Approach and Constraints

This section describes the objectives, structure, and constraints for the software acceptance test plan for FRC Scout.

2.1 Test Objectives

Following the prescribed Acceptance Test Plan process will ensure that the FRC Scout system fulfills all of the functional requirements specified in the Software Requirements Specification (§1.2). The FRC Scout system will be ready for deployment if and only if it passes all of the test cases contained in the Acceptance Test Plan.

2.2 Test Structure

Atomic test cases are derived from the use case scenarios contained in the Software Requirements Specification. Each test case shall have a unique identifier, a name, a high-level description of the functionality it tests, and references to its related requirements in the SRS. Additionally, each test case will contain preconditions, actions, and postconditions. Preconditions describe the state of the system required before the test is performed. The actions include an itemized list of steps the tester will take when performing the test. The postconditions describe the state of the system that is expected after the actions have been performed. If the postconditions are met, then the software has passed the test case.

2.3 Test Constraints

The Acceptance Test Plan will only test the functionality of the FRC Scout software as described in the Software Requirements Specification. The test cases described in the Acceptance Test Plan are not concerned with specific design and implementation details of the system. The test cases focus on ensuring that the correct system behavior is achieved for the complete set of functions available to users of the system.

3. Test Assumptions and Exclusions

This section provides greater details about which functions and features of FRC Scout will and will not be covered by the Acceptance Test Plan process.

3.1 Test Assumptions

It is assumed that all issues covered by the Acceptance Test Plan were also previously addressed by the unit tests, integration tests, and system tests of FRC Scout.

The Acceptance Test Plan will cover:

- The functional requirements of the system listed in the Software Requirements Specification.
- The consistency of the user-related system documentation.

3.2 Test Exclusions

It is assumed that all issues not covered by the Acceptance Test Plan were previously addressed by the unit tests, integration tests, and system tests of FRC Scout.

The Acceptance Test Plan will not cover:

- The non-functional requirements of the system listed in the Software Requirements Specification.
- The structural integrity of the source code.

4. Entry and Exit Criteria

This section lists the criteria that must be satisfied in order for the Acceptance Test Plan to commence, as well as the criteria that must be satisfied in order to conclude the Acceptance Test Plan.

4.1 Entry Criteria

The Acceptance Test Plan can begin after the following preconditions are met:

- FRC Scout has successfully completed unit, integration, and system testing.
- A proper testing environment that meets the hardware and software constraints specified in §2.1.2 and §2.1.3 of the SRS is available.
- A copy of the most recent revision of the Software Requirements Specification has been received.
- Consent has been obtained from the Test Team Leader.
- Consent has been obtained from the FRC Team Member.

4.2 Exit Criteria

The Acceptance Test Plan can end after any of the following conditions have been met:

- All Priority 1 requirements were tested without any deviation from the expected behavior (Success).

- At least one Priority 1 requirement deviated from the documented specification (Failure).

5. Testing Participants

This section describes the roles and responsibilities of the parties involved in the Acceptance Test Plan, as well as the procedure for reporting the test results and any subsequent issues.

5.1 Roles and Responsibilities

For the Acceptance Test Plan, the following individuals filled the roles list below:

- **Test Team Leader:** Ryan Hersh
- **Testers:** Kristian Calhoun, Keith Horrocks, Hannah Pinkos, Jirakit Songprasit
- **FRC Team Member:** Bharadwaj Ramachandran

5.2 Training Requirements

All parties involved in the Acceptance Test Plan should be comfortable with standard web application interfaces. Additionally, all parties should be familiar with the 2013 FRC Game, Ultimate Ascent, the FRC Scout user interface, and the Software Requirements Specification.

5.3 Problem Reporting

Any problem found by either a Tester or the FRC Team Member must be documented and reported to the Test Team Leader via the project's GitHub issue tracking system. The Test Team Leader and development team will review any reported problems during a mandatory post testing review meeting.

5.4 Progress Reporting

The Test Team Leader will compile the Acceptance Test Plan Report after the testing process has been concluded after satisfying any of the criteria listed in §4.2. The Project Leader will review the Acceptance Test Plan Report during the mandatory post testing review meeting.

6. Test Cases

6.1 User authentication

6.1.1 Valid Login

ID	TC 1
Name	Valid Login
Requirement(s)	0260, 0270
Description	The user is authenticated in the system by entering valid login credentials.
Precondition(s)	• The user has connected to the FRC Scout website. • The user has not been authenticated. • The user is on the login page.
Action(s)	1. The user enters an email into the email text field. 2. The user enters a password into the password text field. 3. The user clicks the "Login" button.
Postcondition(s)	• The user is redirected to the event overview page. • The user's email address appears on the toolbar. • A link to logout appears on the toolbar.

6.1.2 Invalid Login

ID	TC 2
Name	Invalid Login
Requirement(s)	0260, 0270
Description	The user enters invalid login credentials and is not authenticated.
Precondition(s)	• The user has connected to the FRC Scout website. • The user has not been authenticated. • The user is on the login page.
Action(s)	1. The user enters an email into the email text field. 2. The user enters a password into the password text field. 3. The user clicks the "Login" button.
Postcondition(s)	• The user is redirected to an error page. • A message appears stating the entered login credentials were invalid. • The user is presented with a button to return to the login page.

6.1.2 Logout

ID	TC 3
Name	Logout
Requirement(s)	0275
Description	The user logs out of the system.
Precondition(s)	• The user has logged into the FRC Scout system.
Action(s)	1. The user clicks the "Logout" hyperlink from the toolbar.
Postcondition(s)	• The user is redirected to the login page. • The user can only access the login page of the FRC Scout website.

6.2 Create a New User Account

ID	TC 4
Name	Create a New User Account
Requirement(s)	0000-0180
Description	The user adds a new user account to the system.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user has the user role of administrator. • The user is currently on the manage user accounts page (System Administrator -> User Accounts).
Action(s)	1. The user clicks the "Add" button on the manage user accounts page and is redirected to the add user account page. 2. The user enters user account data into the appropriate form fields. 3. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected back to the manage user accounts page. • An entry for the new user account appears in the user account table. • The details of user account are saved in the system.

6.3 Modify a User Account

ID	TC 5
Name	Modify a User Account
Requirement(s)	0190-0210
Description	The user edits an existing user account.
Precondition(s)	• The user has logged in to the FRC Scout software.

| | · The user has the user role of administrator. |
	· The user is currently on the manage user accounts page (System Administrator -> User Accounts).
Action(s)	1. The user selects a user account by clicking an entry in the user accounts table.
	2. The user clicks "Edit" button and is redirected to the edit user accounts page.
	3. The user modifies data for the user account, which requires entering a password (which can be the same as a previous password).
	4. The user clicks the "Save" button.
Postcondition(s)	· The user is redirected to the manage user accounts page.
	· The user accounts table reflects changes made to the user account during the edit process.
	· Other user accounts entries in the table remain unchanged.
	· The new details of the modified user account are saved in the system.

6.4 Delete a User Account

ID	TC 6
Name	Delete a User Account
Requirement(s)	0220-0240
Description	The user removes a user account from the system.
Precondition(s)	· The user has logged in to the FRC Scout system.
	· The user has the user role of administrator.
	· The user is currently on the manage user accounts page (System Administrator -> User Accounts).
Action(s)	1. The user selects the user account from the table of user accounts.
	2. The user clicks the "Delete" button.
	3. The user clicks the "Yes" button on the confirmation dialog box.
Postcondition(s)	· The user is on the manage user accounts page.
	· The table of user accounts no longer contains an entry of the deleted user account.
	· The user account is removed from the system.
	· The email address and password of the deleted account are no longer valid login credentials.

6.5 Create a New Event

ID	TC 7
Name	Create a New Event
Requirement(s)	0280-0350
Description	The user adds a new event to the system.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user has the user role of administrator. • The user is currently on the Manage Events page (System Administrator -> Events).
Action(s)	1. The user clicks the "Add" button and is redirected to the Add Event page. 2. The user enters the data for the new event into the appropriate form fields. 3. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected to the Manage Events page. • The table of events contains a new entry containing the data the user just entered. • The details of the added event are recorded in the system.

6.6 Modify an Event

ID	TC 8
Name	Modify an Event
Requirement(s)	0360-0380
Description	The user edits an existing event.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user has the user role of administrator. • The user is currently on the Manage Events page (System Administrator -> Events).
Action(s)	1. The user selects an event by clicking an entry in the table of events. 2. The user clicks the "Edit" button and is redirected to the Edit Event page. 3. The user modifies the event information. 4. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected to the Manage Events page. • The table of events reflects changes made to the event during the edit process. • Other event entries in the table of events remain

| | unchanged. |
| | • The new details of the event are saved in the system. |

6.7 Delete an Event

ID	TC 9
Name	Delete an Event
Requirement(s)	0390, 0400
Description	The user removes an event from the system.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user has the user role of administrator. • The user is currently on the Manage Events page (System Administrator -> Events).
Action(s)	1. The user selects an event by clicking an entry in the table of events. 2. The user clicks the "Delete" button. 3. The user clicks the "Yes" button on the confirmation dialog box.
Postcondition(s)	• The user is on the Manage Events page. • If there are no match records associated with the selected event, the table of events no longer contains an entry for the deleted event. • The event is removed from the system, provided there are no match records associated with it.

6.8 Add a New Team

ID	TC 10
Name	Add a Team
Requirement(s)	0410-0460
Description	The user adds a new team to the system.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user has the user role of scout or administrator. • The user is currently on the Manage Teams Page (for administrators only, under System Administrator -> Teams) or New Match Record page (Manage My Scout Data-> Add).
Action(s)	1. The user clicks the "Add" button and is redirected to the add team page.

	2. The user enters the new team information into the appropriate form fields.
	3. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected back to the originating Manage Teams or New Match Record page.
	• The list of teams (either the table on the Manage Teams page or the drop down menu on the New Match Record page) contains a new entry for the newly created team.
	• The details of the team are recorded in the system.

6.9 Modify a Team

ID	TC 11
Name	Modify a Team
Requirement(s)	0470-0490
Description	The user edits an existing team.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user has the user role of administrator.
	• The user is currently on the Manage Teams page (System Administrator -> Teams).
Action(s)	1. The user selects a team by clicking an entry in the table of teams.
	2. The user clicks the "Edit" button and is redirected to the edit team page.
	3. The user modifies the team information.
	4. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected to the Manage Teams page.
	• The table of teams reflects changes made to the team during the edit process.
	• Other team entries in the table remain unchanged.
	• The new details of team are saved in the system.

6.10 Delete a Team

ID	TC 12
Name	Delete a Team
Requirement(s)	0500, 0510
Description	The user removes a team from the system.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user has the user role of administrator.
	• The user is currently on the Manage Teams page (System Administrator -> Teams).
Action(s)	1. The user selects a team by clicking an entry in the table

	of teams.
	2. The user clicks the "Delete" button.
	3. The user clicks the "Yes" button on the confirmation dialog box.
Postcondition(s)	• The user is on the Manage Teams page.
	• If there are no match records associated with the given team:
	o The table of teams no longer contains an entry for the deleted team.
	o The team is removed from the system.
	• If there are match records associated with the given team, the team remains in the table.

6.11 Add a Match Record

ID	TC 13
Name	Add a Match Record
Requirement(s)	0520-0740
Description	The user adds a new match record to the system.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user has the user role of scout or administrator.
	• The user is currently on the Manage My Scout Data page.
Action(s)	1. The user clicks the "Add" button and is redirected to the New Match Record page.
	2. The user enters match record data into the appropriate form fields.
	3. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected to the Manage My Scout Data page.
	• The newly entered match record appears in the match record table.
	• The details of the match record are recorded in the system.

6.12 Modify a Match Record

ID	TC 14
Name	Modify a match record
Requirement(s)	0800-0830
Description	The user edits an existing match record.
Precondition(s)	• The user has logged in to the FRC Scout system.

	• The user has the user role of scout or administrator.
	• The user is currently on the Manage My Scout Data page.
Action(s)	1. The user selects a match record by clicking an entry in the match record table.
	2. The user clicks the "Edit" button and is redirected to the edit match record page.
	3. The user modifies the match record data.
	4. The user clicks the "Save" button.
Postcondition(s)	• The user is redirected to the Manage My Scout Data page.
	• The match record table reflects changes made to the match record during the edit process.
	• Other match record entries in the table remain unchanged.
	• The new details of the added match record are saved in the system.

6.13 Delete a Match Record

ID	TC 15
Name	Delete a match record
Requirement(s)	0840-0865
Description	The user deletes an existing match record.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user has the user role of scout or administrator.
	• The user is currently on the Manage My Scout Data page.
Action(s)	1. The user selects an existing match record by clicking an entry in the match record table.
	2. The user clicks the "Delete" button.
	3. The user clicks the "Yes" button on the confirmation dialog box.
Postcondition(s)	• The user is on the Manage My Scout Data page.
	• The table of match records no longer contains an entry for the deleted match record.
	• The match record is removed from the system.

6.14 View a Match Record

ID	TC 16
Name	View a match record.
Requirement(s)	0870, 0970
Description	The user views the complete details for an existing match record.

Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on the View Match, View Team, or View Matches page. • The user has selected a team or match from the drop down menu on the page.
Action(s)	1. The user selects a match record by clicking an entry in the table of match records. 2. The user clicks the "View Match Record" button and is redirected to the view match record page.
Postcondition(s)	• The page displays all available data about the match record • A "Return" button is visible to redirect the user to the previous page.

6.15 Sort Data

6.15.1 Sort Data Ascendingly by a Data Point

ID	TC 17
Name	Sort Data Ascendingly by a Data Point
Requirement(s)	0946
Description	The user sorts the data in a data table ascendingly by a specified data point.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on a page containing a data table.
Action(s)	1. The user clicks the column header for the desired sort data point.
Postcondition(s)	• The data in the table is sorted ascendingly by the specified data point. • Other columns in the table are rearranged such that each row continues to contain data related to one entry.

6.15.2 Sort Data Descendingly by a Data Point

ID	TC 18
Name	Sort Data Descendingly by a Data Point
Requirement(s)	0947
Description	The user sorts the data in a data table descendingly by a specified data point.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on a page containing a data table.

Action(s)	1. If the column for the desired sort data point is already sorted ascendingly, the user clicks on the column header for that data point.
	2. Otherwise, the user clicks the column header for the sort data point twice.
Postcondition(s)	• The data in the table is sorted descendingly by the specified data point.
	• Other columns in the table are rearranged such that each row continues to contain data related to one entry.

6.16 View Information Grouped by Event

6.16.1 View Event Overview

ID	TC 22
Name	View Event Overview
Requirement(s)	0910-0942
Description	The user views the complete details for an existing event.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user is currently on the Group by Event page.
	• An event has been selected from the drop down menu.
Action(s)	1. The user clicks the event overview tab.
Postcondition(s)	• The selected event remains unchanged.
	• The content on the event overview tab is visible.
	• Data tables and charts on the event overview tab are populated with data related to the selected event (provided data for the selected event exists within the system).

6.16.2 View a Match at an Event

ID	TC 23
Name	View a Match at an Event
Requirement(s)	0910, 0920, 0950-0970
Description	The user views the complete details for an existing match at an event.
Precondition(s)	• The user has logged in to the FRC Scout system.
	• The user is currently on the Group by Event page.
	• An event has been selected.
Action(s)	1. The user clicks the View Match tab.

	2. The user selects a match from the drop down menu.
Postcondition(s)	• The selected event remains unchanged. • The content on the view match tab is visible. • Data tables on the view match tab are populated with data related to the selected match.

6.16.3 View a Team at an Event

ID	TC 24
Name	View a Team at an Event
Requirement(s)	0910, 0920, 0980-0990
Description	The user views the complete details for an existing team at an event.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on the Group by Event page. • An event has been selected.
Action(s)	1. The user clicks the View Team tab. 2. The user selects a team from the drop down menu.
Postcondition(s)	• The selected event remains unchanged. • The content on the view team tab is visible. • Data tables and charts on the view match tab are populated with data related to the selected team.

6.17 View Information Grouped by Team

6.17.1 View a Team Profile

ID	TC 25
Name	View a Team Profile
Requirement(s)	1000-1040, 1060-1080
Description	The user views the complete details for an existing team profile.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on the Group by Team page. • A team has been selected from the drop down menu.
Action(s)	1. The user clicks the team profile tab.
Postcondition(s)	• The selected team remains unchanged. • The content of the team profile tab is visible. • Data tables and charts on the team profile tab are populated with data related to the selected team.

6.17.2 View a Team's Matches

ID	TC 26
Name	View a Team's Matches
Requirement(s)	1000, 1020, 1080-1090
Description	The user views the complete details for an existing team's matches.
Precondition(s)	• The user has logged in to the FRC Scout system. • The user is currently on the Group by Team page. • A team has been selected from the drop down menu.
Action(s)	1. The user clicks the view matches tab.
Postcondition(s)	• The selected team remains unchanged. • The content on the View Matches tab is visible. • Data tables on the View Matches tab are populated with data related to the selected team's match records.