

User Requirements Specification

<Product: Indoor Football Strategy Simulation>

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Revision History

Version	Revision Date	Description of change	Author
0.1	08/09/2018	Document Created	Viet Hai Nguyen
0.2	16/09/2018	Added UML class diagram (Figure 5.1)	Thanh Nguyen
0.3	16/09/2018	Added Functional and Non-functional requirements	Viet Hai Nguyen
0.4	18/09/2018	Added UML class diagram (Figure 5.2)	Thanh Nguyen
0.5	18/9/2018	Added GUI and added structure to document	Alex Lievense
0.6	18/9/2018	Added Use Cases Diagrams and Use Cases	Viet Hai Nguyen
0.7	22/9/2018	Update UML Class Diagram for Iteration 1	Thanh Nguyen

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1. Introduction

1.1 Objectives

This is the user requirements specification for the Indoor Football Strategy Simulation Application for use by Mr. Johnson.

1.2 Scope

This User Requirements Specification applies to the Indoor Football Match Simulation Application. The URS will address the functions the application must be able to perform to successfully obtain primary functionality.

1.3 Product Overview

An indoor football match simulator will be created by using C# as programming language, with the purpose of assisting football coaches in finding the best strategy against a specific strategy.

1.4 Users

Our target users are managers or coaches of an indoor football team.

1.5 Definitions, acronyms and abbreviations

URS	User Requirements Specification
M	Must Have
S	Should Have
C	Could Have
W	Won't Have
Users	Managers/ Coaches
FR	Functional Requirements
NR	Non-functional Requirements
UML	Unified Modeling Language

2. User Interfaces

2.1 Simulation Input

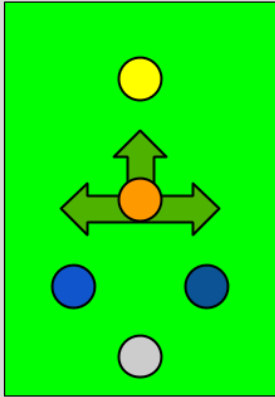
[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

Welcome to the Indoor Football Strategy Simulator. In the fields below you can specify which strategies you want to use for your own team and for the away team.
You can see more details about a strategy on the right.

Select Strategies

Home Team	Away Team
<input type="checkbox"/> 3-1-0	<input type="checkbox"/> 3-1-0
<input type="checkbox"/> 3-0-1	<input type="checkbox"/> 3-0-1
<input type="checkbox"/> 2-2-0	<input type="checkbox"/> 2-2-0
<input type="checkbox"/> 2-1-1	<input type="checkbox"/> 2-1-1
<input type="checkbox"/> 2-0-2	<input type="checkbox"/> 2-0-2
<input type="checkbox"/> 1-2-1	<input type="checkbox"/> 1-2-1
<input type="checkbox"/> Indoor Catenaccio	<input type="checkbox"/> Indoor Catenaccio

Preview Strategy



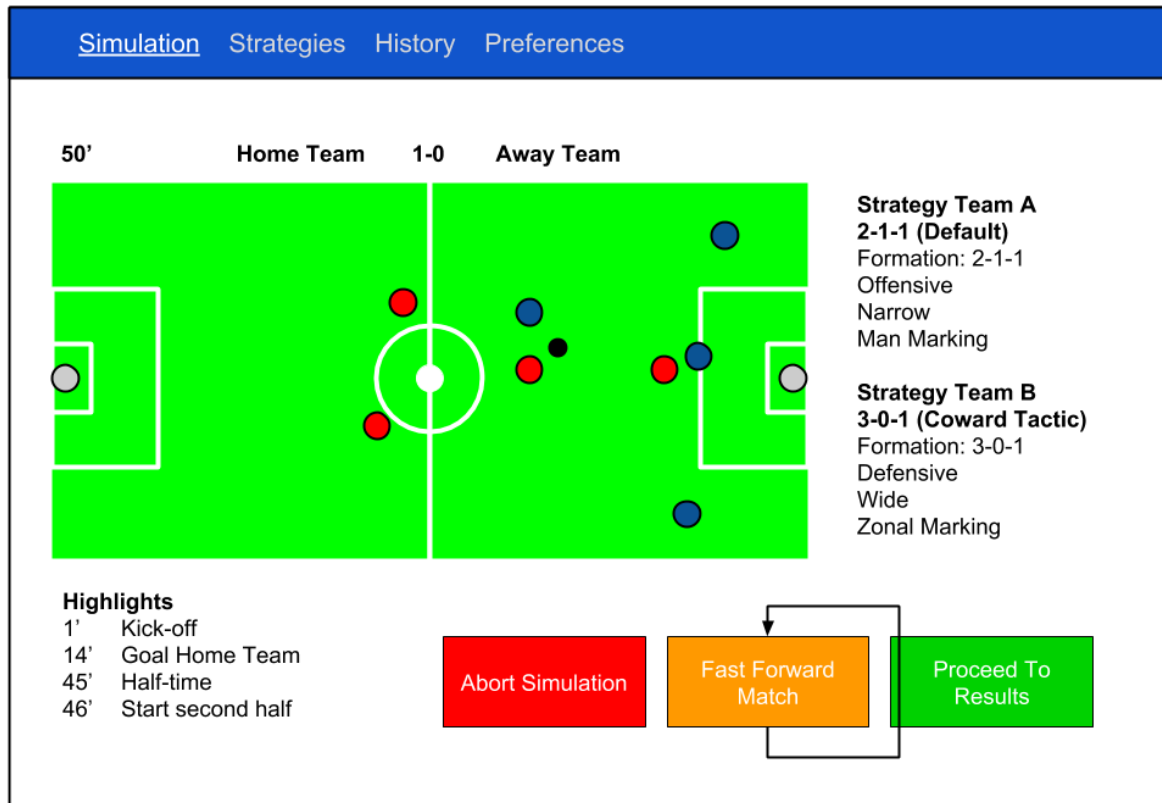
2-1-1 (Default)
Defensive
Zonal Marking
Use the wings

How many times do you want to run the simulation per matchup?

5

Start Simulation

2.2 Simulation Process



2.3 Simulation Results

[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

Simulation Results

- 3-1-0 proved to be the best strategy to use against 2-2-0 with a win-rate of 60%
- 1-2-1 and 2-1-1 proved to be the best strategies to use against Indoor Catenaccio with a win-rate of 40%

See all results

Save results

Discard results

Match	3-1-0 vs 2-2-0	1-2-1 vs 2-2-0	2-1-1 vs 2-2-0	3-1-0 vs Indoor Catenaccio	1-2-1 vs Indoor Catenaccio	2-1-1 vs Indoor Catenaccio
1	1-0	0-5	0-3	0-0	1-0	0-0
2	4-2	0-3	1-2	0-0	0-0	1-0
3	3-1	1-2	3-4	0-1	1-1	0-0
4	0-4	1-0	2-3	0-0	2-1	0-0
5	1-2	2-1	1-1	1-1	0-0	1-0

Export as PDF

Export as CSV

2.4 Strategy Management

[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

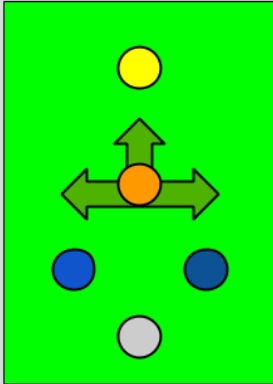
In this section you can add new strategies, modify existing strategies and delete strategies.

Strategies

<input type="checkbox"/> 3-1-0	Edit	Delete
<input type="checkbox"/> 3-0-1	Edit	Delete
<input type="checkbox"/> 2-2-0	Edit	Delete
<input type="checkbox"/> 2-1-1	Edit	Delete
<input type="checkbox"/> 2-0-2	Edit	Delete
<input type="checkbox"/> 1-2-1	Edit	Delete
<input type="checkbox"/> Indoor Catenaccio	Edit	Delete

[Add New Strategy](#)[Remove Selection](#)

Preview Strategy



Team Mentality
☐ Offensive
☐ Defensive

Width
☐ Narrow
☐ Wide

Player Marking
☐ Man Marking
☐ Zonal Marking

Formation

Name

[Save Strategy](#)[Discard Changes](#)

2.5 Simulation Flow



2.6 Remarks

Note that GUIs for historical results and Preferences are still missing, since we are not focussing on these features at this point in time.

3. Requirements

3.1 Functional Requirements

ID	Requirements	Description	Priority
FR-01	Create new strategy	Application should allow users to create new strategy and save it to use for running simulation.	S
FR-02	Edit exist strategy	Application should allow users to editing the existing strategy.	S/C
FR-03	Run simulation	Application must allow users to run simulation based on the selected strategy	M
FR-04	Show simulation history	Application should show the history of all previous simulation	S
FR-05	Show results of selected previous simulation	Application should show the results of the selected simulation	S
FR-06	Login system	Application could have a login system	C
FR-07	Run on different platform		W
FR-08	Adjust the speed of simulation	Application won't allow users to adjust the speed of simulation	W
FR-09	Edit players statistics	Application won't allow users to edit players statistics	W
FR-10	Show players statistics	Application could show players statistics	C
FR-11	Edit strategy during the simulation	Application could allow users to edit strategy during the simulation	C
FR-12	Edit squad	Application won't allow users to edit the squad	W
FR-12	Export results as PDF	Application should export results of simulation as PDF	S
FR-13	Exports results as CSV	Application could export results of simulation as CSV	C

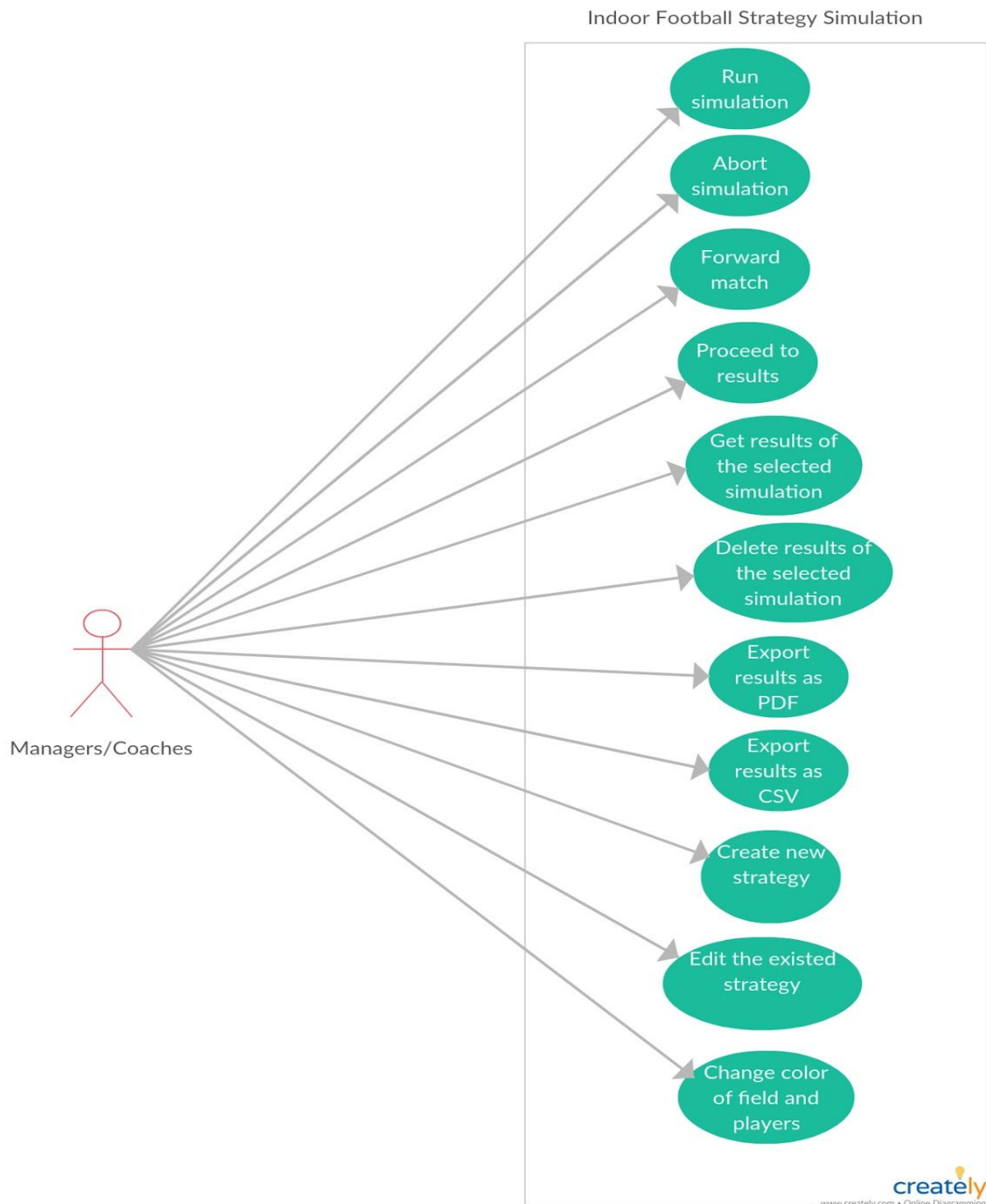
FR-14	Abort Simulation	Application should allow users to abort simulation	S
FR-15	Forward Match	Application could allow users to forward match	C
FR-16	Proceed to Results	Application should allow users to proceed to results	S
FR-17	Change Color of Field and Players	Application could allow users to change color of field and players	C
FR-18	Delete results	Application should allow users to delete selected results	S

3.2 Non-functional Requirements

ID	Requirements	Description	Priority
NR-01	Time for one match simulation < 3 minutes		S

4. Use cases

4.1 Use cases diagram



4.2 Use cases

Name: Run simulation

Goal: System simulates and displays the simulation to user.

Actor: Users

Precondition: Strategies were already created

Main success scenario:

1. System show all strategies were created.
2. User selects strategies of team A and team B
3. User inputs amount times each combination of strategies should be performed.
4. User
5. System performs a simulation
6. System displays output

Exceptions:

Postcondition:

Name: Abort simulation

Goal: System shows output of simulation and stops simulation

Actor: Users

Main success scenario:

1. User clicks on Abort Simulation button
2. System shows the messages and allows user to choose Yes or No
3. User clicks on Yes button
4. System stops simulation
5. System displays output

Alternate scenario:

- 3.1. User clicks on No button
- 4.1. System continues running the simulation

Exceptions:

3a. User does not click any button

- i. System waits for user decision
- ii. Back to MSS at step 3

Name: Forward Match

Goal:

Actor: Users

Main success scenario:

Exceptions:

Name: *Proceed to results*

Goal: System shows results of simulation

Actor: Users

Main success scenario:

1. User clicks on Proceed To Results button
2. System shows the messages and allows user to choose Yes or No
3. User clicks on Yes button
4. System stops simulation
5. System displays output

Alternate scenario:

- 3.1. User clicks on No button
- 4.1. System continues running the simulation

Exceptions:

3a. User does not click any button

- i. System waits for user decision
- ii. Back to MSS at step 3

Name: *Get results of the selected simulation*

Goal: System shows results of the selected simulation

Actor: Users

Precondition: User had already run simulation at least one time

Main success scenario:

1. User selects simulation
2. User clicks on Show Results button
3. System displays results

Exceptions:

2a. User did not select the simulation

- i. System show the warning message
- ii. Back to MSS at step 1

Name: *Delete the selected simulation*

Goal: System remove the results of simulation

Actor: Users

Main success scenario:

1. User selects simulation
2. User clicks on Delete Results button
3. System removes the simulation with it's results

Exceptions:

2a. User did not select the simulation

i. System show the warning message

ii. Back to MSS at step 1

5. UML class diagrams

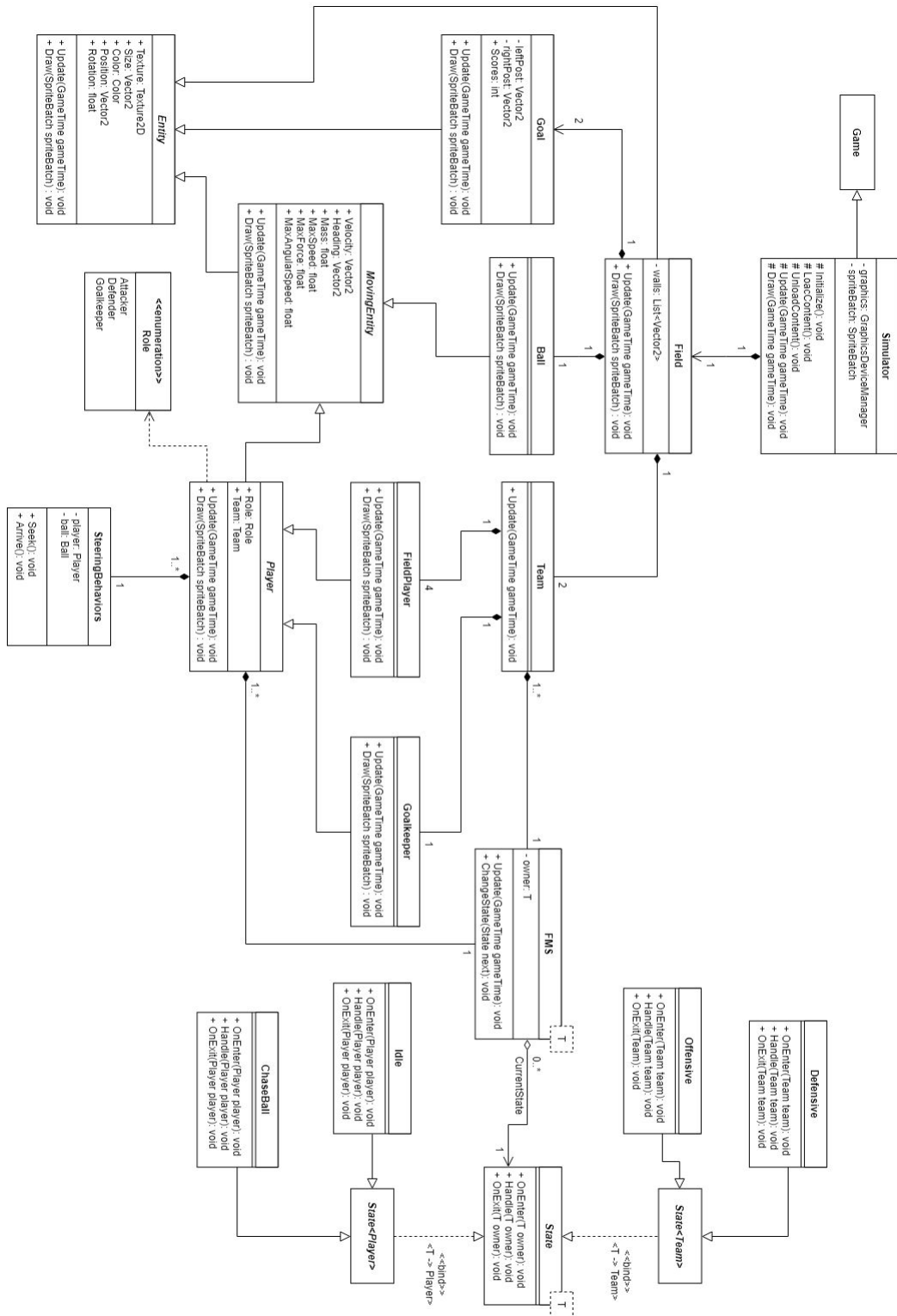


Figure 5. UML Class Diagram for Iteration 1

6. Sequence diagrams