SMART INDIA HACKATHON 2022

Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: MSME

PS Code: RK1121

Problem Statement Title: Developing virtual reality based solution.

Team Name: VROOM.

Team Leader Name: Surya Narayanan CS.

Institute Code (AISHE): AK 1109

Institute Name: Sona college of technology.

Theme Name: Smart Education

Approach:

- 1. Smart wearable to track and record the player's movement in real-time using GPS. During post-game analysis, playback the player movement to understand/study the team's performance.
- 2. Detecting the fouls, ball outside field, etc., using the parameters like sound, proximity to help the umpires make the decision.
- 3. Find the player's health (tiredness) and inform the coach / manager who can be put to rest using parameters like step count, movement, heart rate etc.
- 4. Hockey dashboard - Cloud/Web-based software for the organizer to start the new game, add players, goals, game timer and update players' specific data like goals, foul, game timer etc. Dashboard view for the spectators for the selected game with an automatic scoreboard update.

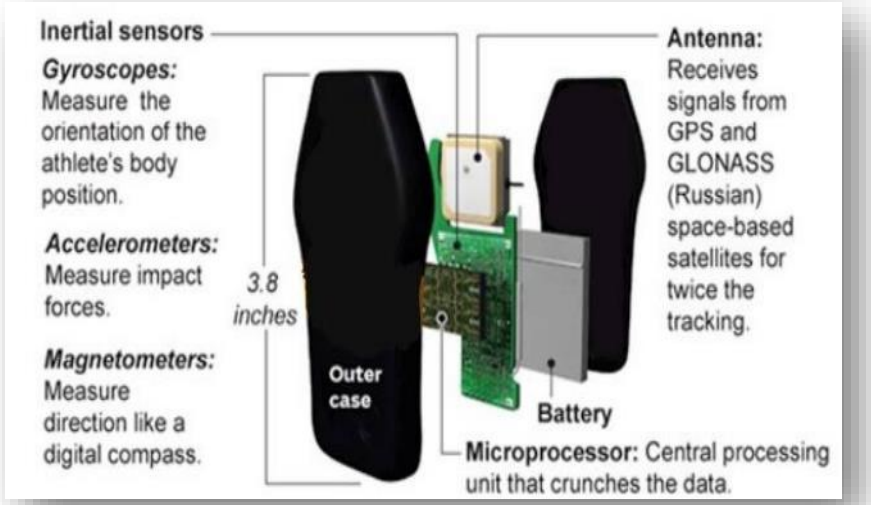


Fig 1.1 : System Architecture

Highlights:

This is initially done to hockey but based on the parameters of other sports, can be applicable to other field sports like football, cricket, etc,.

Fig 1.2 : Health status page

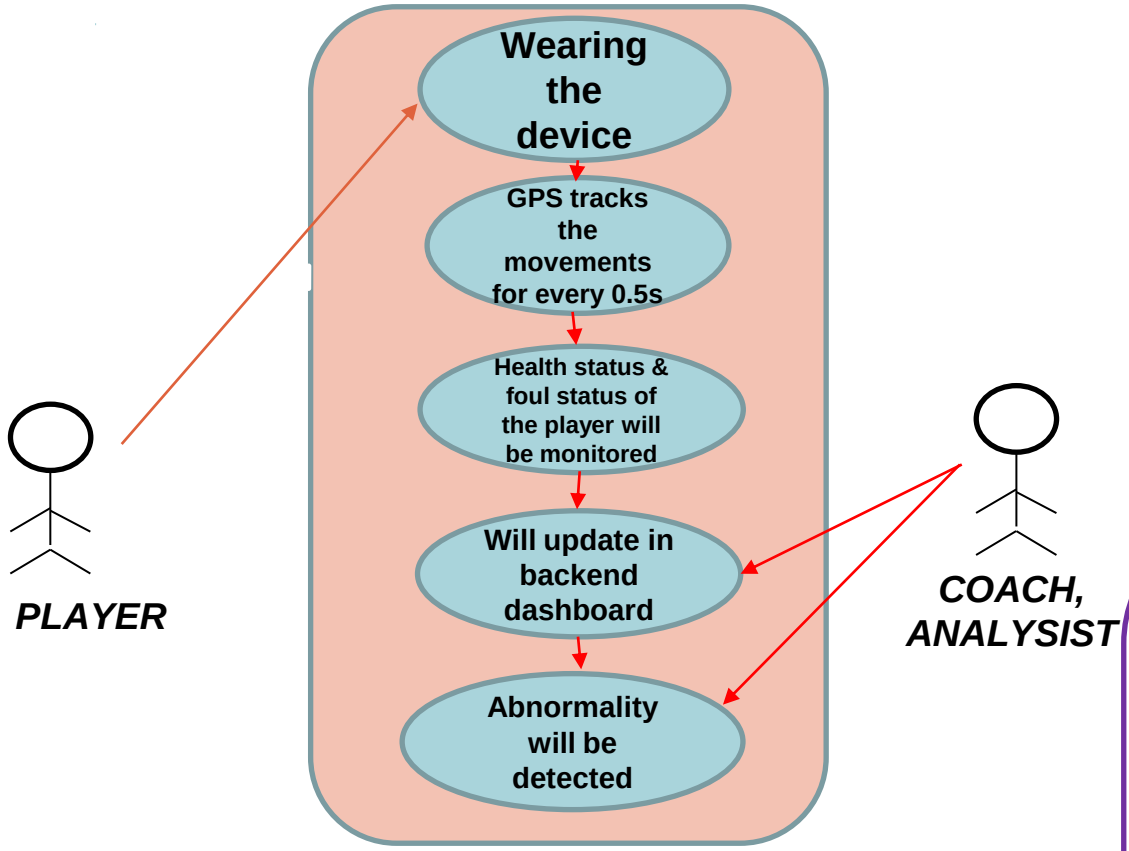
HARDWARE REQUIREMENTS:

- Max 30100 sensor
- GPS module
- Knock sensor
- Lactic echo sensor
- Inertial sensor

SOFTWARE REQUIREMENTS:

- HTML,CSS, Mapbox
- Mongo DB
- AWS

Use Cases:



✓ Fig 1.3 : Analysis of two player using GPS

DEPENDENCIES:

- Internet Connectivity.

Key Summary:

✓ A wearable device is placed on the human's upper arm which features sensors :

✓ * MAX3010 – pulse oximeter sensor for monitoring the blood oxygen levels and pulse level.

✓ * Lactic sensor for measuring the tiredness.

✓ * Inertial sensors which measures the acceleration and angular velocity of an object along three mutually perpendicular axes based on the physical laws.

Team Member Details

Team Leader Name: Surya Narayanan CS

Branch : B.E Stream : ECE Year : II

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Team Mentor 1 Name: Mr. Anand

Category : Academic Expertise : AI/ML