

team(9)

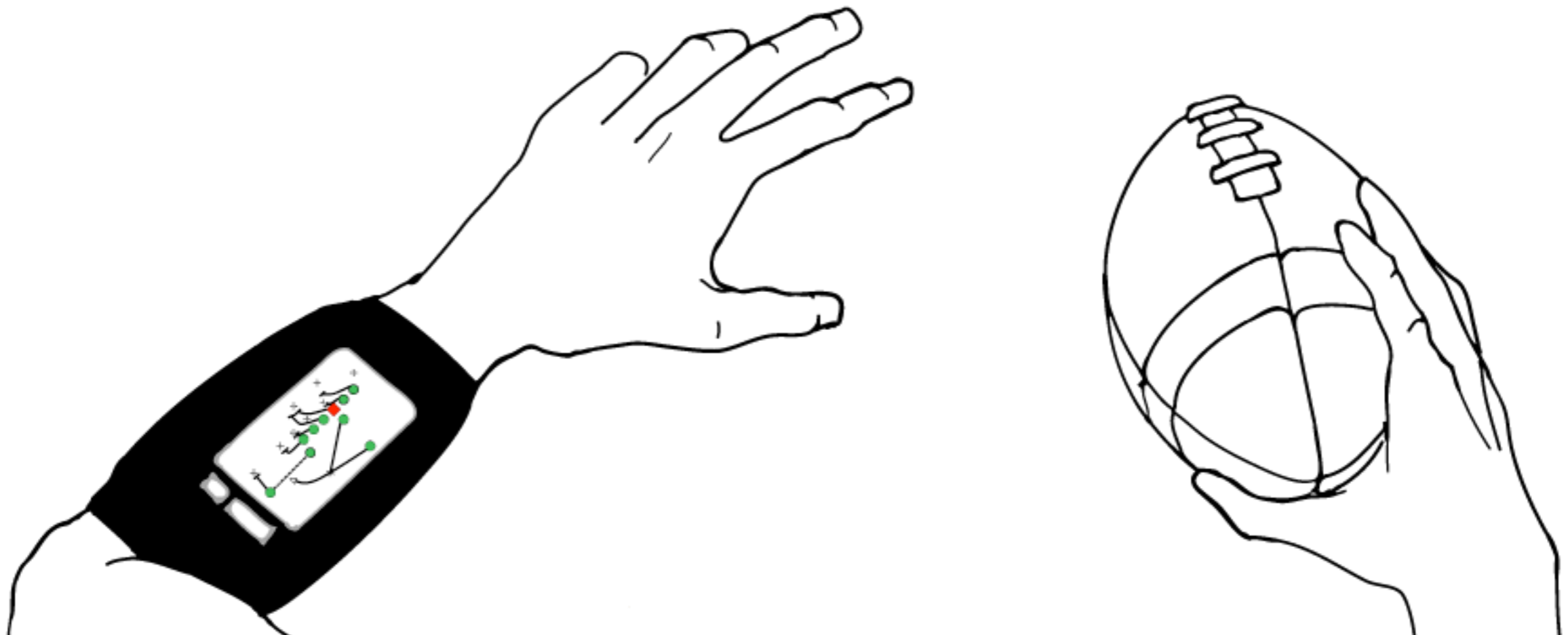
Ben Cohen

Harsh Jariwala

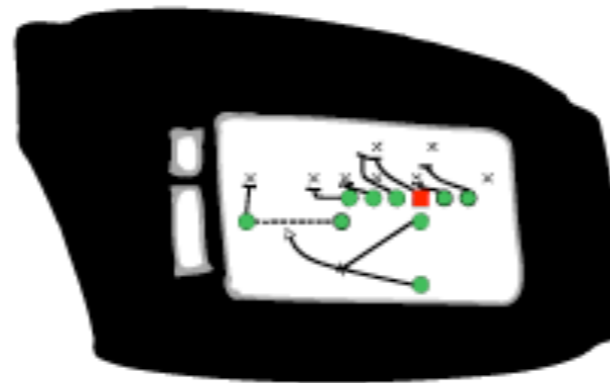
Louis de Valliere

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VisualEyes



Project Concept & Motivation



Concept

VisualEyes is an embedded device that NFL quarterbacks wear on their arm to receive an animation of the play call sent to them by the head coach.

Motivation

Current method of communication is error prone

Before & After

VisualEyes will provide a robust and reliable communication system between the quarterback and the head coach.

Competitors

ID Coach

- Plays pre-stored on memory card
- No play call or result tracking
- Only one level of transmission
- Big device for quarterback
- Special hardware PDA needed
- Cannot use any tablet/device



Digital Playbooks

- Create and view plays only
- Superior user interface
- No on-field receiver

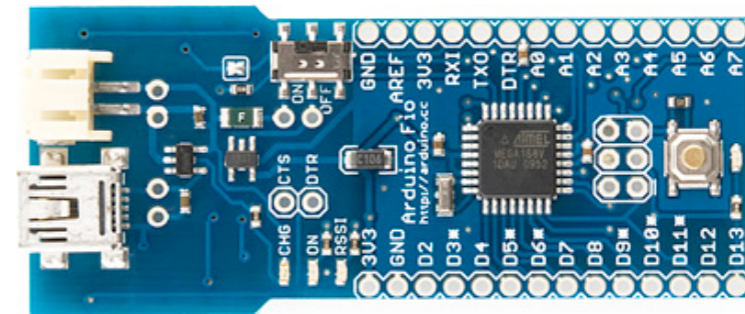


Requirements

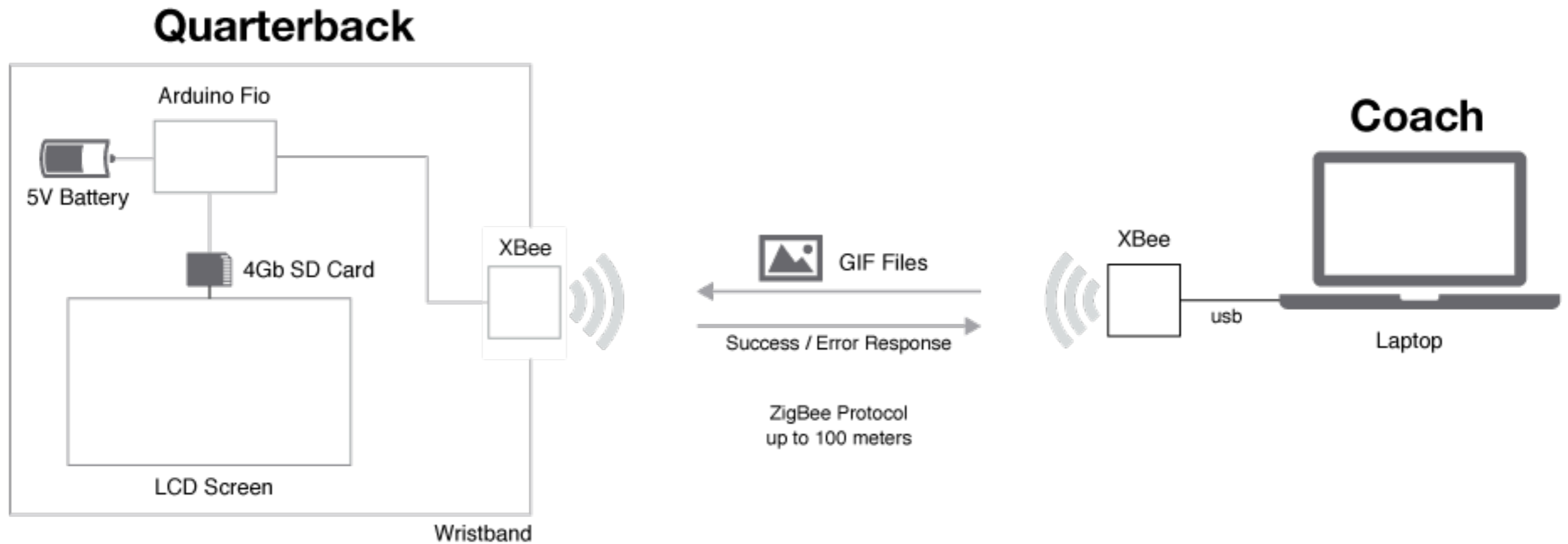
- Support only **football plays**
- Support only **one receiver** wristband
- Play can be **transmitted long distances** – 100 meters
- Have play call **secured during transmission** – 128 bit encryption
- Have receiver **receive the play calls fast** - within 1 second
- **Rugged display case** that can handle even the worst QB sacks – withstand 7 foot drop test
- Long lasting **battery life** - 5 hours on a full charge
- Display automatically **adjusts brightness** - up to 14000 LUX for sunny days
- **Error message** on both ends if play call could not be sent/received
- Device needs to be **lightweight and comfortable** to wear

Technical Specifications

- Arduino FIO
- Systems 4D 4.3" LCD Touch Screen
- 4GB SD Card
- 2 x XBee wireless connectors
- 5V battery
- Case for display (gorilla glass)
- Wristband outfitted for device
- LDR - Light dependent resistor



Architecture



Risks & Mitigation Strategies

LCD breaking

- Gorilla case for protection

Connection issues

- Speed issues
- Distance
- Security

Battery life

- Make it swappable