Ruaidhri Molloy portfolio

Software Engineer
Dublin, Ireland
Linkedin
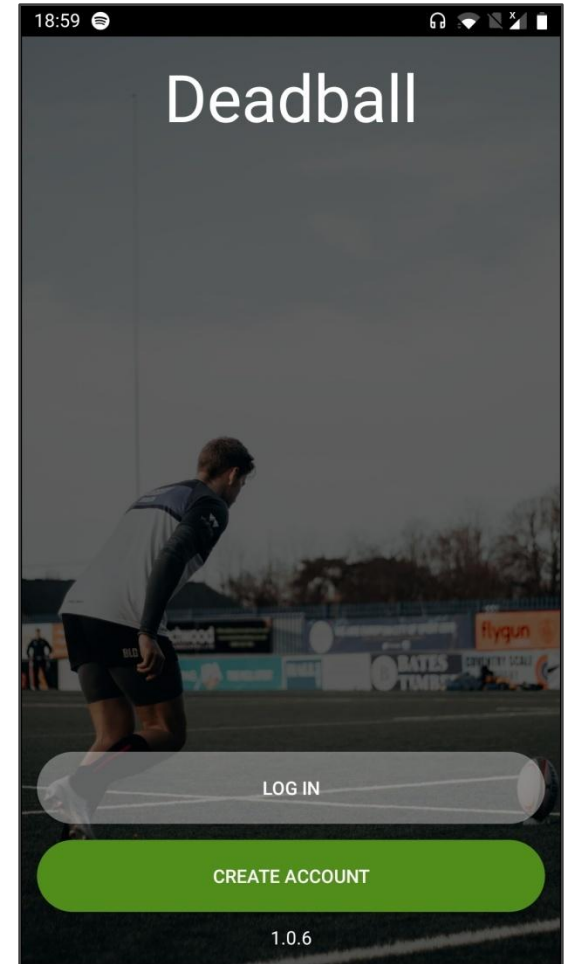rmolloy10@gmail.com
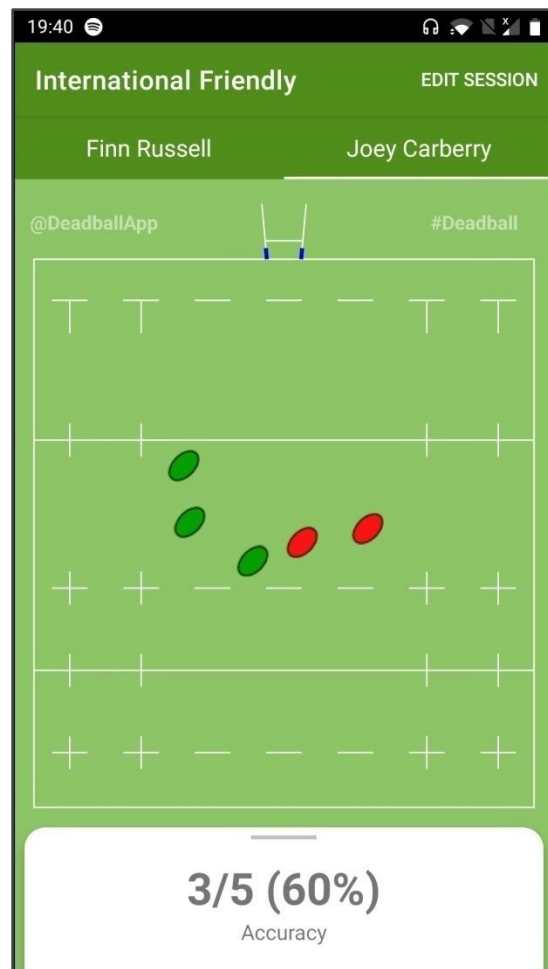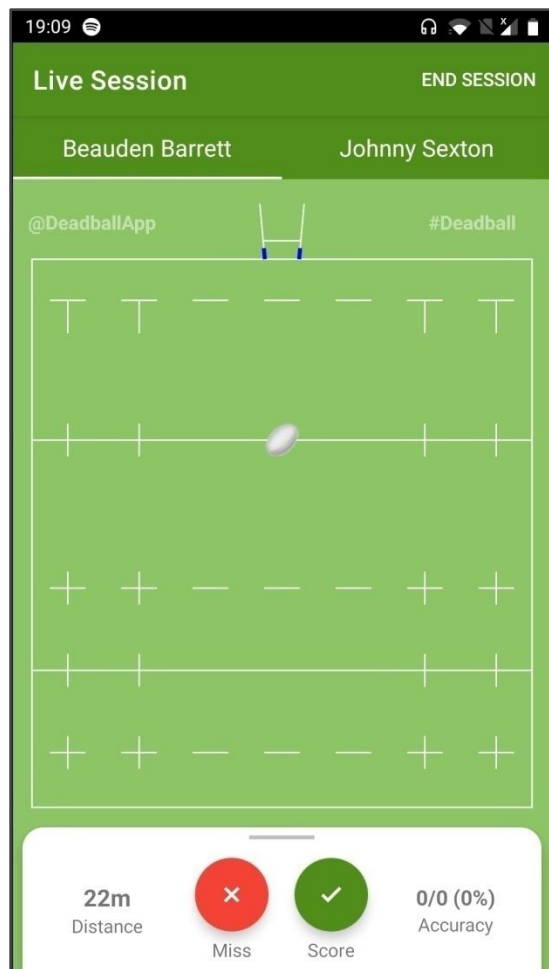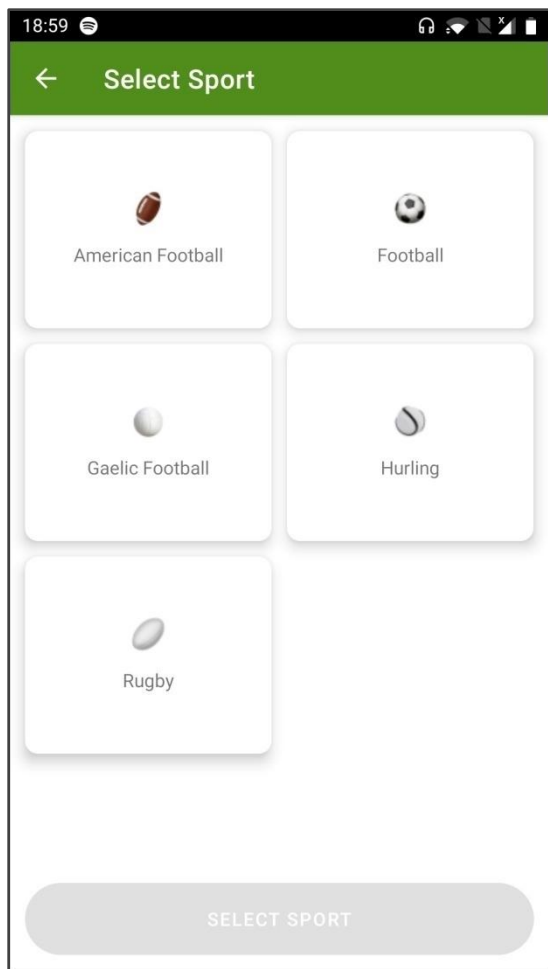Github

Deadball

- **Personal Side Project**

- **Platform**: Android (Kotlin)

- **Date**: 2022

- **Role**: Sole Developer – From Scratch

Sports analytics app to create shot maps for players and teams to see what areas of the field need improvement. Supports rugby, football, American football, gaelic football and hurling

Screen 1 — Select Sport

18:59

← Select Sport

American Football

Football

Gaelic Football

Hurling

Rugby

SELECT SPORT

Screen 2 — Live Session

19:09

Live Session   END SESSION

Beauden Barrett   Johnny Sexton

@DeadballApp   #Deadball

22m
Distance

✕ Miss

✓ Score

0/0 (0%)
Accuracy

Screen 3 — International Friendly

19:40

International Friendly   EDIT SESSION

Finn Russell   Joey Carberry

@DeadballApp   #Deadball

3/5 (60%)
Accuracy

Screen 1 — Sessions

19:09

Sessions ⚙

France Camp Matthieu Jalibert		2022-06-24
Friday Evening Beauden Barrett, Dan Bigger, Eoin Farrell, Finn Russell, Handre Pollard		2022-06-24
Connaught Training Jack Carty		2022-06-24
Friday Evening Eoin Farrell		2022-06-24
Friday Evening Dan Bigger		2022-06-24
Friday Evening Beauden Barrett		2022-06-24
Southern Hemisphere Beauden Barrett, Handre Pollard, Quade Cooper		2022-06-24
Joey Training		2022-06-24

Sessions   Players

Screen 2 — Players

19:09

Players ⚙

Beauden Barrett	New Zealand
Dan Bigger	Wales
Eoin Farrell	England
Finn Russell	Scotland
Handre Pollard	South Africa
Jack Carty	Ireland
Joey Carberry	Ireland
Johnny Sexton	Ireland

Sessions   Players

Screen 3 — Player Profile

18:12

← **Player Profile**

Johnny Sexton
Ireland
12 sessions | 5 Training | 7 Game

Chart values (Accuracy %): 83.0, 100.0, 81.0, 66.0, 71.0, 87.0, 85.0, 85.0, 94.0, 93.0, 88.0, 87.0

■ Accuracy (%)

Average	Total	Last
8/10 (80%)	107/122 (87%)	7/8 (87%)
Accuracy	Accuracy	Accuracy

Live Session — END SESSION

Harry Kane | Jorginho

N/A
Last Shot

Miss | Score

0/0 (0%)
Accuracy

Live Session — END SESSION

Rian O'Neill | Shane Walsh

@DeadballApp | #Deadball

45m
Distance

Miss | Score

0/0 (0%)
Accuracy

Deadball PRO
Unlock all features

Add unlimited players

Add unlimited shots

No ads

Support new feature development

Cancel any time in Google Play

€1.99/MONTH
NO FREE TRIAL AVAILABLE
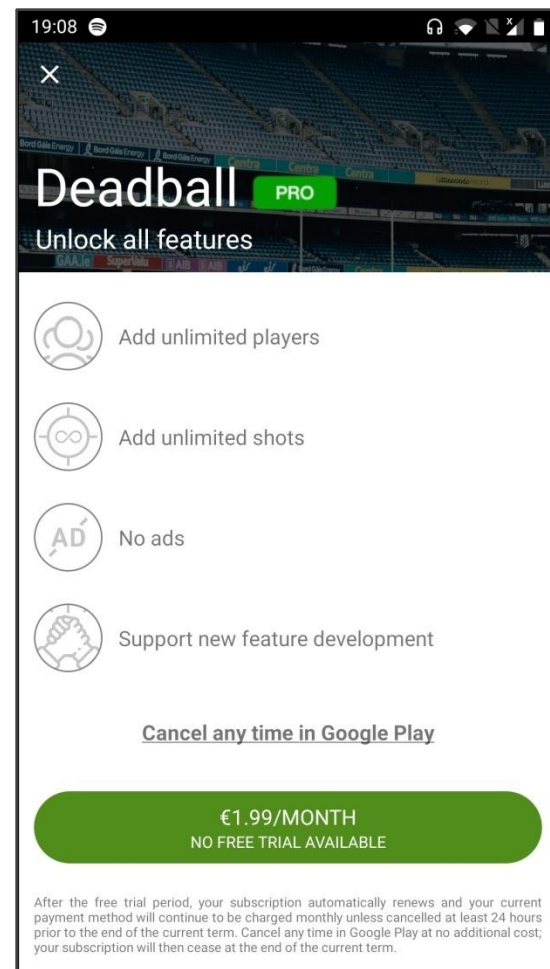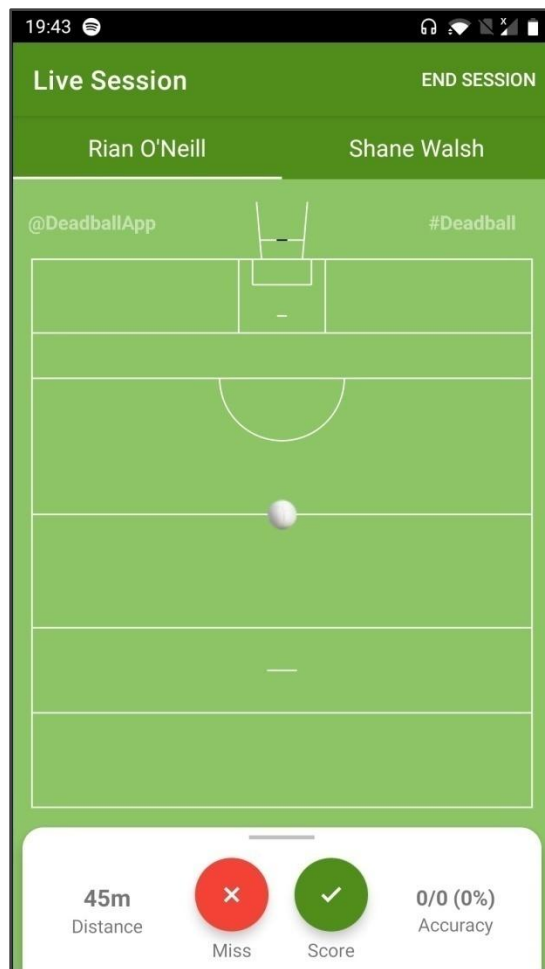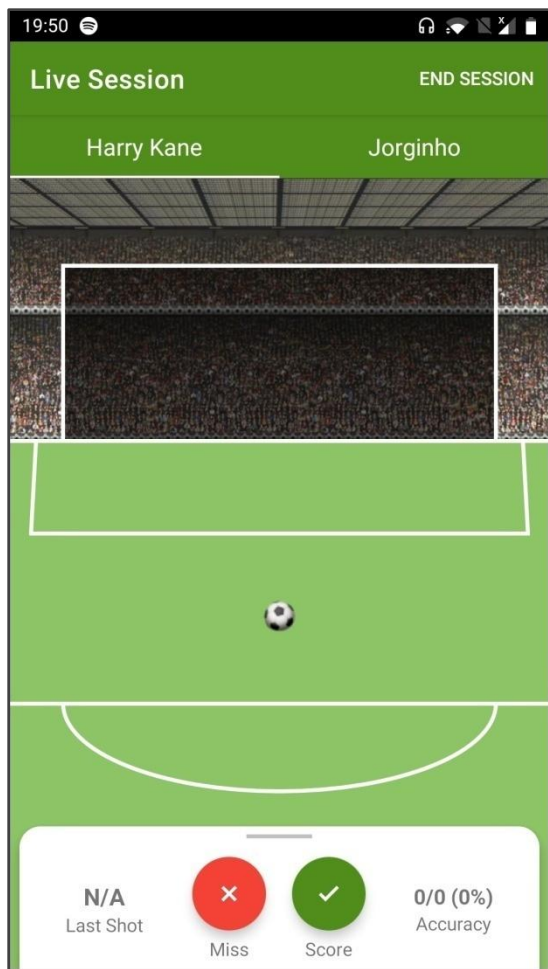
Daily Doozy

- **Personal Side Project**

- **Platform**: Android (Kotlin)

- **Date**: 2022

- **Role**: Sole Developer – From Scratch

Multi-choice trivia app

Screen 1

What type of pasta is rigatoni?

Shaped pasta

Soup pasta

Tubular pasta

Stuffed pasta

Submit Answer

Skip Question

Screen 2

What type of pasta is rigatoni?

Shaped pasta

Soup pasta

Tubular pasta

Stuffed pasta

Submit Answer

Incorrect

Skip Question

Screen 3

Which date on the Christian calendar marks The Epiphany, when Jesus, Mary and Joseph met The Three Wise Men?

January 6th

October 19th

June 20th

December 1st

Submit Answer

Correct

Skip Question

Verisense

- **Developed at:** Shimmer Research

- **Platform**: Windows (Java)

- **Date**: 2019-2022

- **Role**: Contributor (Cloud)

Wearable sensing platform designed specifically for clinical trials

Dashboard

VERISENSE CLOUD

DASHBOARD

DATA

CONFIGURATION

LICENSE

SYSTEM V1.02.001
LICENSE EXPIRES: JAN 2020 (DATA PROCESSING)
JAN 2020 (SYSTEM ACCESS)

9 Sites

■ OK ■ Warning ■ Error

	Name	Participant Status	Base Station Status
	Barcelona	Total: 0 / No Data	Total: 0 / No Data
	BOSTON2	Total: 1 / Error: 1	Total: 3 / Error: 3
	Czech	Total: 0 / No Data	Total: 1 / Error: 1
	FWTest	Total: 4 / Warning: 2 ... OK: 2	Total: 5 / Error: 4 ... OK: 1

Hardware

Operator
jyong@shimmersensing.com

VERISENSE CLOUD

DASHBOARD

DATA

CONFIGURATION

LICENSE

SYSTEM V1.02.001
LICENSE EXPIRES: JAN 2020 (DATA PROCESSING)
JAN 2020 (SYSTEM ACCESS)

Trial   **Hardware**   Algorithm   Notifications   Sites   Users   Participants

Sensor settings

Reset   Save

Sensor Sampling Rate (Hz)

25

Sensor Range(±g)

8

Firmware Version

v1.01.023

Upload Time

9:00 AM

Day 2: Tuesday 24/12/2019

SPT Window: Sleep   SPT Window: Wake   Inactivity   Light PA   Moderate PA   Vigorous PA   Non-Wear

Sleep-onset   Wake

Angle of sensor's z-axis relative to horizontal plane:

Arm movement:

midnight 2am 4am 6am 8am 10am noon 2pm 4pm 6pm 8pm 10pm midnight

Day 3: Wednesday 25/12/2019

SPT Window: Sleep   SPT Window: Wake   Inactivity   Light PA   Moderate PA   Vigorous PA   Non-Wear

Sleep-onset   Wake   Sleep-onset

Angle of sensor's z-axis relative to horizontal plane:

Arm movement:

midnight 2am 4am 6am 8am 10am noon 2pm 4pm 6pm 8pm 10pm midnight

Team15

- **Personal Side Project**

- **Platform**: Android (Kotlin)

- **Date**: 2019

- **Role**: Sole Developer – From Scratch

Gaelic football/hurling team builder app to share selection on game-day via social media

Screen 1 (left):

Team15

Insert Team A
vs. Insert Team Name B
Insert competition name and stage, time and date, venue etc.

@Team15App   #Team15

1
Goalkeeper

2
Left corner back
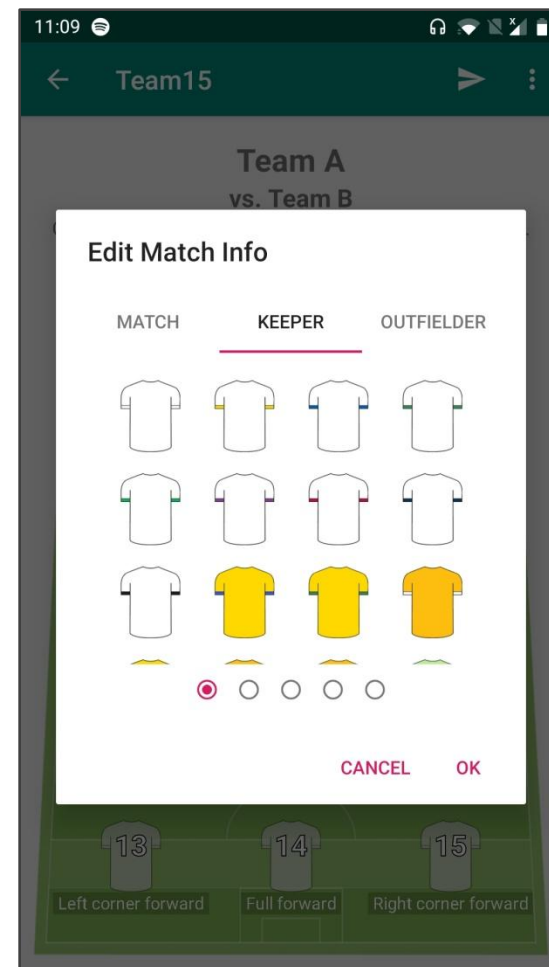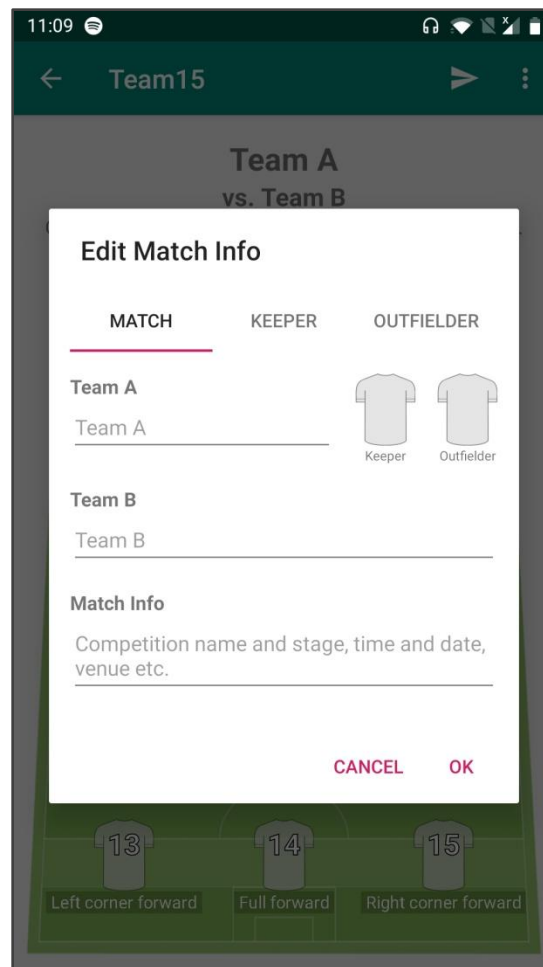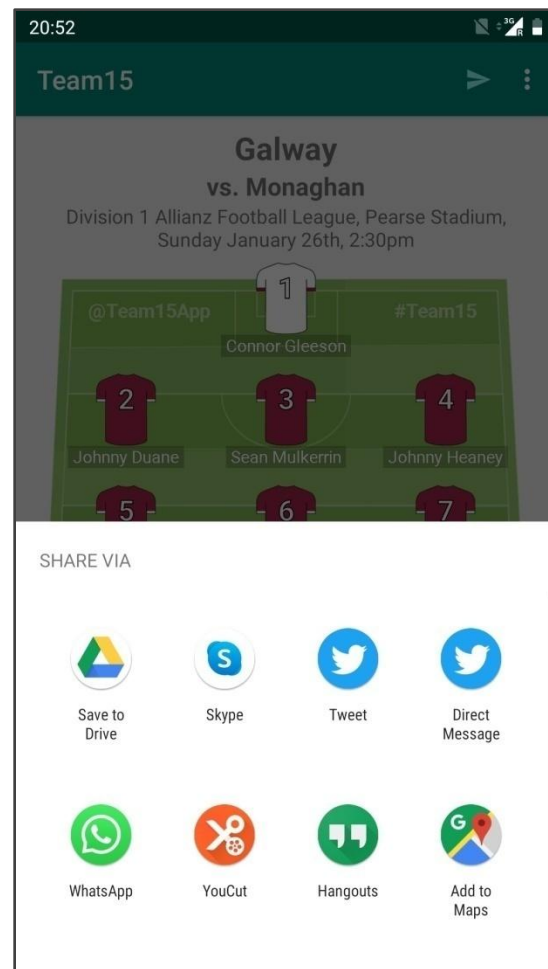
3
Full back

4
Right corner back

5
Left half back

6
Center back

7
Right half back

8
Midfield A

9
Midfield B

10
Left half forward

11
Center forward

12
Right half forward

13
Left corner forward

14
Full forward

15
Right corner forward

Screen 2 (middle):

Team15

Team A
vs. Team B

Edit Match Info

MATCH   KEEPER   OUTFIELDER

Team A
Team A

Keeper   Outfielder

Team B
Team B

Match Info
Competition name and stage, time and date, venue etc.

CANCEL   OK

13
Left corner forward

14
Full forward

15
Right corner forward

Screen 3 (right):

Team15

Team A
vs. Team B

Edit Match Info

MATCH   KEEPER   OUTFIELDER

CANCEL   OK

13
Left corner forward

14
Full forward

15
Right corner forward

NeuroLynQ

- **Developed at:** Shimmer Research

- **Platform**: Windows (Java)

- **Date**: 2018

- **Role**: Contributor
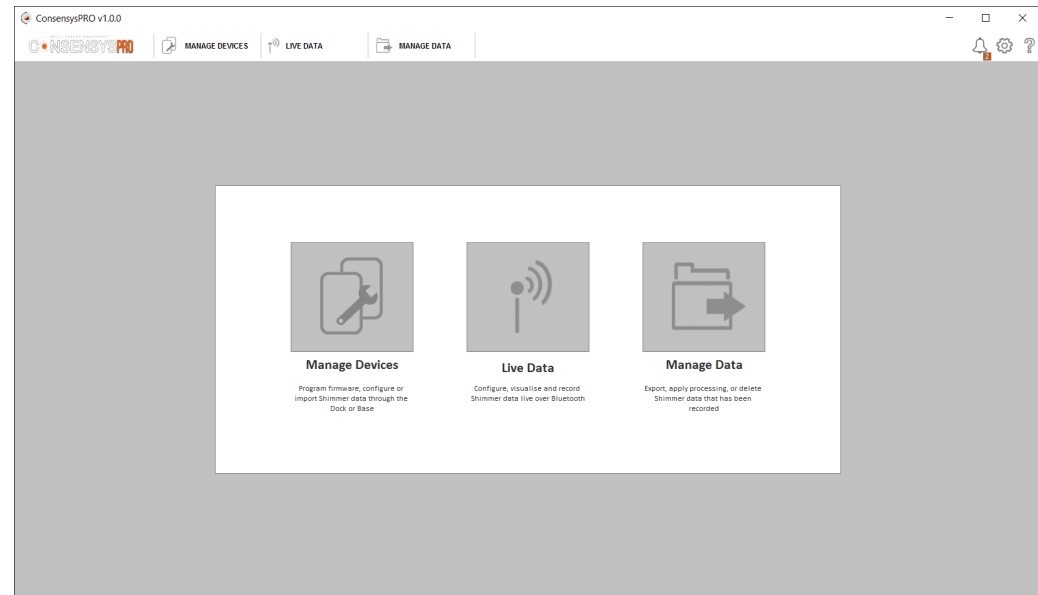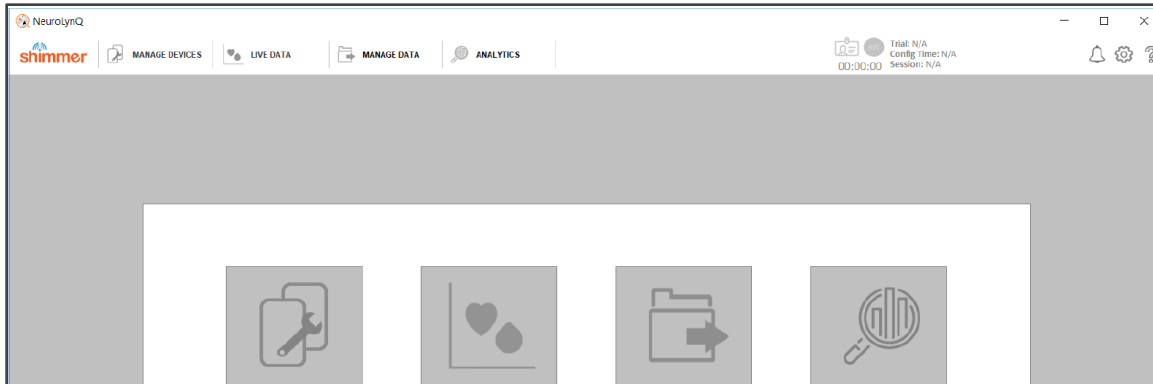
App to measure the emotional response of a group of up to 45+ people simultaneously through use of GSR and PPG sensor

NeuroLynQ

shimmer MANAGE DEVICES   LIVE DATA   MANAGE DATA   ANALYTICS

Trial: N/A
Config Time: N/A
00:00:00 Session: N/A

Ma NeuroLynQ v2.0.0

shimmer   MANAGE DEVICES   LIVE DATA   MANAGE DATA   ANALYTICS

Progra
import S

AVAILABLE HARDWARE [SELECT DEVICES FOR VISUALISATION BELOW]

VISUALISATION [USE THE BUTTONS BELOW TO CHANGE THE PLOT STYLE]

DEVICES ∧ (31/31)

01e6 [S01_01E6]		1.1 μS	●
01d1 [S02_01D1]		7.9 μS	●
016a [S03_016A]		6.8 μS	●
017e [S04_017E]		1.6 μS	●
0111 [S05_0111]		1.5 μS	●
02a3 [S06_02A3]		1.7 μS	●
02b7 [S07_02B7]		6.5 μS	●
0122 [S08_0122]		11.6 μS	●
0157 [S09_0157]		17.1 μS	●
0168 [S10_0168]		2.9 μS	●

Group Response   Plot per Sensor   Plot per Shimmer   Dashboard

Set GSR baseline (3s)   Apply GSR baseline

INDIVIDUAL RESPONSE

● S01_01E6	● S02_01D1	● S03_016A
● S04_017E	● S05_0111	● S06_02A3
● S07_02B7	● S08_0122	● S09_0157
● S10_0168	● S11_0280	● S12_0286
● S13_0271	● S14_0120	● S15_01A1
● S16_0287	● S19_029A	● S20_01C7
● S23_01AE	● S24_01A7	● S25_01A6
● S26		
● S32		

Group Response Instantaneous

● % High Response   3.7%
● % Medium Response 29.6%
● % No Response   66.7%

WEBCAM: Logitech_Webcam_C930e

Logitech_Webcam_C930e

GROUP RESPON

Trial: Brexit_DCU
Config Time: 3rd Oct 2019 07:39:41
Session: 1
00:07:14.135

NeuroLynQ v2.0.0

shimmer   MANAGE DEVICES   LIVE DATA   MANAGE DATA   ANALYTICS

Manage Studies (EF Test)   >   Manage Segments   >   Analyse Segments

RESULTS

PLOT

NAME ∧	AVG	MAX
TrumpPos		
Test		
% Any Response	40.80	70.00
% High Response	2.86	8.00
% Medium Response	37.94	85.00
% No Response	59.20	84.00

TrumpPos_Test:Any_Response CAL %   TrumpPos_Test:High_Response CAL %

EXPORT

Fusion – CIMIT

- **Developed at:** Shimmer Research

- **Platform**: Windows (Java)

- **Date**: 2017

- **Role**: Co-Lead Developer

App to assist clinicians with implant of a Cardiac Resynchronization Therapy (CRT) device and with periodic therapy titration using a single ECG sensor.

Fusion v1.1.0

Patient Demographics

Name:
MRN:
Age:
Gender:

Implant:
☐ Primary   ☐ CRTD
☐ Upgrade   ☐ CRTP

Conduction Substrate:
☐ LBBB   ☐ Ischemic   ☐ SR
☐ RV Pacing ☐ Rhythm   ☐ AF
QRSd(ms)   PR(ms)   ☐ AVB

Remodeling Odds ⓘ   1

Odds Ratio (95% CI) vs. Ischemic T3

T1   T2   T3

LV Lead Position   1

RV Lead:
RAO:
LAO:

Real-time

Save Real-time as
Baseline
RV Wave
LV Wave
Fusion Wave

Real-time Options

Baseline Plot

Select ECG Data Source

Baseline QRSd
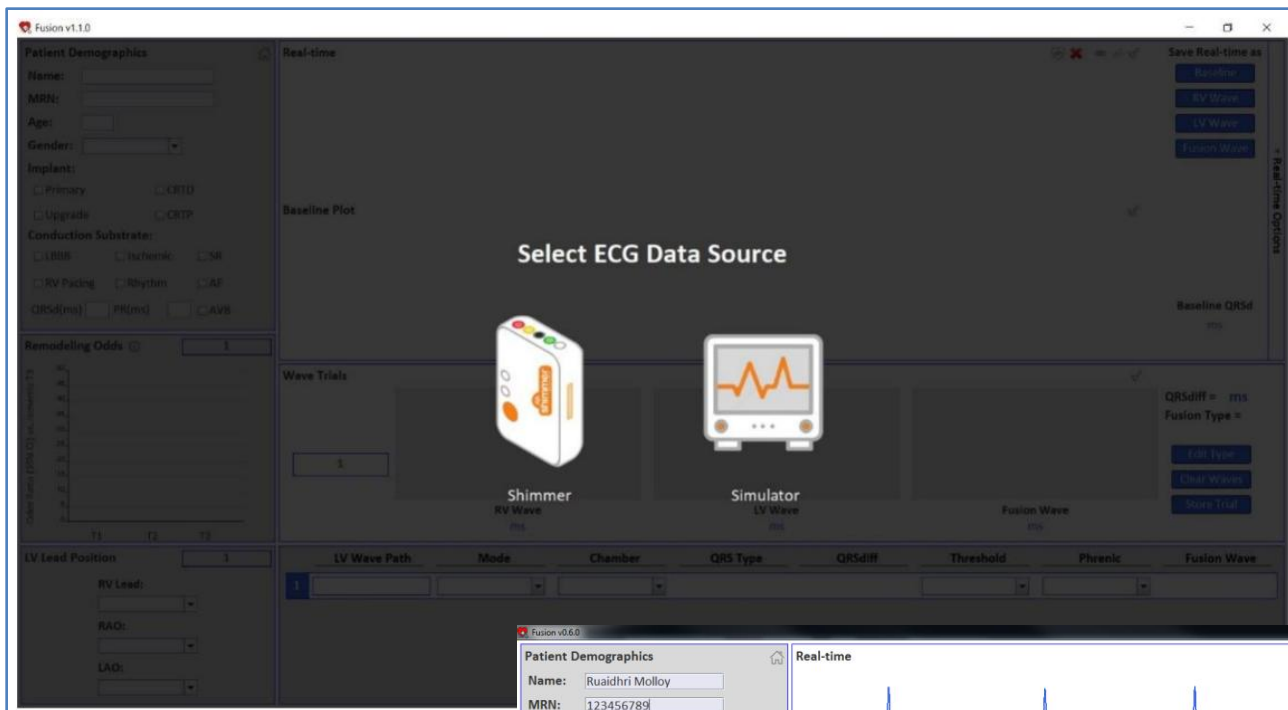ms

Wave Trials

1

QRSdiff =   ms
Fusion Type =

Edit Type
Clear Waves
Store Trial

Shimmer   Simulator
RV Wave   LV Wave   Fusion Wave
ms   ms   ms

LV Wave Path	Mode	Chamber	QRS Type	QRSdiff	Threshold	Phrenic	Fusion Wave
1							

Fusion v0.6.0

Patient Demographics

Name: Ruaidhri Molloy
MRN: 123456789
Age: 27
Gender: Male

Implant:
☐ Primary   ☐ CRTD
☐ Upgrade   ☐ CRTP

Conduction Substrate:
☐ LBBB   ☐ Ischemic   ☐ SR
☐ RV Pacing ☐ Rhythm   ☐ AF
QRSd(ms)   PR(ms)   ☐ AVB

Remodeling Odds ⓘ   1

Odds Ratio (95% CI) vs. Ischemic T3

50
45
40
35
30
25
20
15
10
5

T1   T2   T3

LV Lead Position   1

RV Lead:
RAO:
LAO:

Real-time

Save Real-time as
Baseline
RV Wave
LV Wave
Fusion Wave

Real-time Options

Select ECG Wave
ECG_LL-RA_24BIT

Filters
☑ High pass: 0.05Hz
☑ Low pass: 150.0Hz
☑ AC Filter: 50.0Hz

Adjust QRS Limit
⊖   0.015   ⊕
Adjust Q Bias
⊖   -3.0ms   ⊕
Adjust S Bias
⊖   3.0ms   ⊕

Baseline Plot

QRSdiff =   ms
Fusion Type =

Edit Type
Clear Waves
Store Trial

Confirm Wave Segmentation

Q Wave   S Wave
◄   ►   ◄   ►

QRS 1   QRS 2   QRS 3

QRSd = 92ms, Predominantly +ve   QRSd = 92ms, Predominantly +ve   QRSd = 91ms, Predominantly +ve

Reject   Save

Phrenic   Fusion Wave

Remove Row   Add Row   Select As Final

Consensys

- **Developed at:** Shimmer Research

- **Platform**: Windows (Java)

- **Date**: 2016

- **Role**: Contributor

All-in-one multi Shimmer sensor management software supporting firmware updates, configuration, data collection, storage and processing
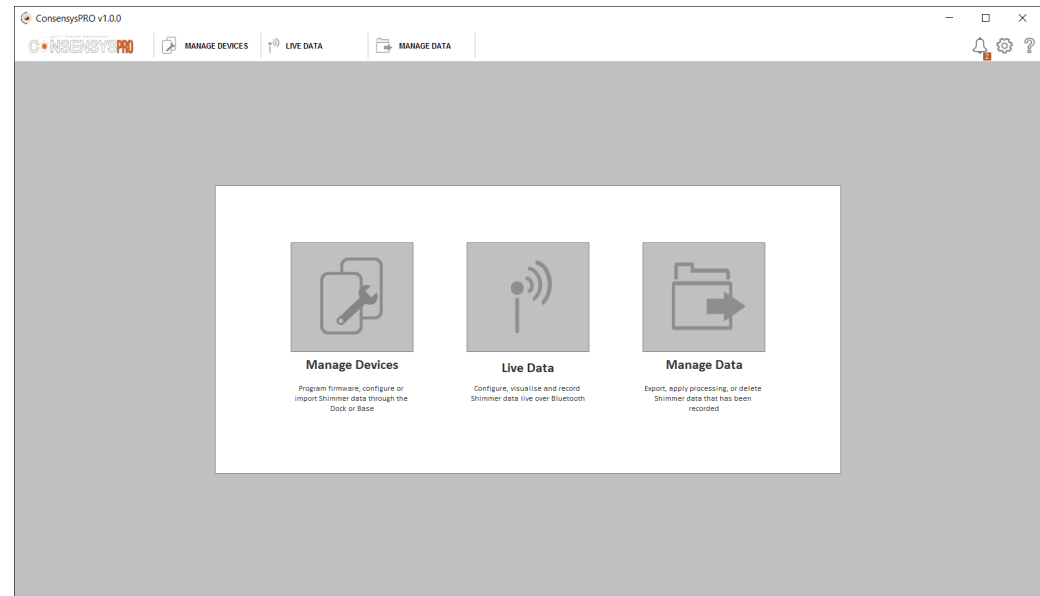
ConsensysPRO v1.0.0

MANAGE DEVICES LIVE DATA MANAGE DATA

AVAILABLE SHIMMERS (SELECT SHIMMERS FROM THE TABLE OR THE HARDWARE VISUALISATION)

HARDWARE VISUALISATION (0/15)

Base15U.01 Select All

LOCATION ▲	BT RADIO ID	EXPANSION	FIRMWARE	SD CARD	TIME	BATTERY
Base15U.01.01	9B97	ECG/EMG/Resp	LogAndStream v0.7.0	0.38 MB / 7.39 GB	2016/09/01 12:39:07	99.7%
Base15U.01.02	9ECF	GSR+	LogAndStream v0.7.0	0.22 MB / 7.39 GB	2016/09/01 12:39:10	100.0%
Base15U.01.03	E74F	Bridge Amplifier+	LogAndStream v0.7.0	0.38 MB / 7.39 GB	2016/09/01 12:39:12	100.0%
Base15U.01.04	5331	ECG/EMG/Resp	LogAndStream v0.7.0	0.50 MB / 7.39 GB	2016/09/01 12:39:15	100.0%
Base15U.01.05	9F38	GSR+	LogAndStream v0.7.0	0.50 MB / 7.39 GB	2016/09/01 12:39:17	100.0%
Base15U.01.06	E751	Bridge Amplifier+	LogAndStream v0.7.0	0.34 MB / 7.39 GB	2016/09/01 12:39:20	100.0%
Base15U.01.07	9B8D	ECG/EMG/Resp	LogAndStream v0.7.0	0.63 MB / 7.39 GB	2016/09/01 12:38:37	99.6%
Base15U.01.08	8D66	GSR+	LogAndStream v0.7.0	0.22 MB / 7.39 GB	2016/09/01 12:38:39	100.0%
Base15U.01.09	7711	None	LogAndStream v0.7.0	0.38 MB / 7.39 GB	2016/09/01 12:38:42	100.0%
Base15U.01.10	9C70	ECG/EMG/Resp	LogAndStream v0.7.0	0.38 MB / 7.39 GB	2016/09/01 12:38:44	98.1%
Base15U.01.11	3BEB	GSR+	LogAndStream v0.7.0	0.69 MB / 7.39 GB	2016/09/01 12:38:47	100.0%
Base15U.01.12	76FF	None	LogAndStream v0.7.0	0.53 MB / 7.39 GB	2016/09/01 12:38:50	99.7%
Base15U.01.13	9D34	ECG/EMG/Resp	LogAndStream v0.7.0	0.38 MB / 7.39 GB	2016/09/01 12:38:52	99.3%
Base15U.01.14	9F1A	GSR+	LogAndStream v0.7.0	0.25 MB / 7.39 GB	2016/09/01 12:38:55	100.0%

Shimmer(s) with firmware highlighted

ConsensysPRO v1.0.0

MANAGE DEVICES LIVE DATA MANAGE DATA

TRIAL NAME: DefaultTrial ✓

SHIMMER NAME: Shimmer_3BEB SAMPLING RATE (Hz): 51.20 ✓ Reset

SENSORS ALGORITHMS CALIBRATION

Start/Stop Logging Method

User Button Undock/Dock

All config options above apply to each of the Shimmers listed in the table below

Low-Noise Accelerometer Wide-Range Accelerometer Gyroscope

Range: +/- 2g Range: +/- 500dps

AVAILABLE SHIMMERS

LOCATION ▲	BT RADIO ID	EXPANSION	SHIMMER NAME
Base15U.01.08	8D66	GSR+	Shimmer_8D66
Base15U.01.09	7711	None	Shimmer_7711
Base15U.01.10	9C70	ECG/EMG/Resp	Shimmer_9C70
Base15U.01.11	3BEB	GSR+	Shimmer_3BEB
Base15U.01.12	76FF	None	Shimmer_76FF
Base15U.01.13	9D34	ECG/EMG/Resp	Shimmer_9D34

BACK

ConsensysPRO v1.0.0

MANAGE DEVICES LIVE DATA MANAGE DATA

AVAILABLE DEVICES (3/3) (SELECT SHIMMERS FROM THE TABLE FOR BLUETOOTH CONFIGURATION)

DATA VISUALISATION (Active: Plot 4) 3D FFT

SELECT DEVICES RECORDING DETAILS AND STATUS ▾

9F1A (Shimmer_9F1A)
Exp: GSR+ Fw: v0.6.0 Fs: 51.2Hz
State: Streaming Overall Packets: 100.0%
Trial: DefaultTrial
Time: 2016/09/01 12:54:36
Live Session: N/A

5331 (Shimmer_5331)
Exp: ECG/EMG/Resp Fw: v0.6.15 Fs: 51.2Hz
State: Streaming Overall Packets: 99.9%
Trial: DefaultTrial
Time: 2016/09/01 12:54:36
Live Session: N/A

76FF (Shimmer_76FF)
Exp: None Fw: v0.6.0 Fs: 51.2Hz
State: Streaming Overall Packets: 100.0%
Trial: DefaultTrial
Time: 2016/09/01 12:54:36
Live Session: N/A

Plot 1 Plot 2 Plot 3 Plot 4

Shimmer_9F1A Accel_LN_Z CAL m/(s^2)*
Shimmer_9F1A Accel_LN_Y CAL m/(s^2)*
Shimmer_9F1A Accel_LN_X CAL m/(s^2)*

Shimmer_5331 Accel_LN_Z CAL m/(s^2)*
Shimmer_5331 Accel_LN_Y CAL m/(s^2)*
Shimmer_5331 Accel_LN_X CAL m/(s^2)*

Shimmer_76FF Accel_LN_Z CAL m/(s^2)
Shimmer_76FF Accel_LN_Y CAL m/(s^2)*
Shimmer_76FF Accel_LN_X CAL m/(s^2)*

Shimmer_76FF Accel_LN_X CAL m/(s^2)
Shimmer_5331 Accel_LN_X CAL m/(s^2)*
Shimmer_9F1A Accel_LN_X CAL m/(s^2)*

CONNECTION (3/5) CONFIGURE (3/3) STREAM (3/3) RECORD (3/3)

START (0/0) STOP (3/3)

LID Monitor - ClearSky

- **Developed at:** Shimmer Research

- **Platform**: Windows (Java)

- **Date**: 2015

- **Role**: Co-Lead Developer

App to monitor the side effects of medication for Parkinson's sufferers using six IMU sensors

ClearSky v0.0.1

Welcome.

ClearSky®
medical diagnostics

shimmer

Waiting for patient details

Stage 1 of 6 ●

1. Patient details

Please fill in the information on this page and click 'Next' when you are finished.

NHS Number: 0123456789 ⊘ ●

Test start date & Time: 23 ▼ October ▼ 2015 ▼ 00 ▼ 00 ▼ ●

ClearSky v0.0.1

Welcome.

ClearSky®
medical diagnostics
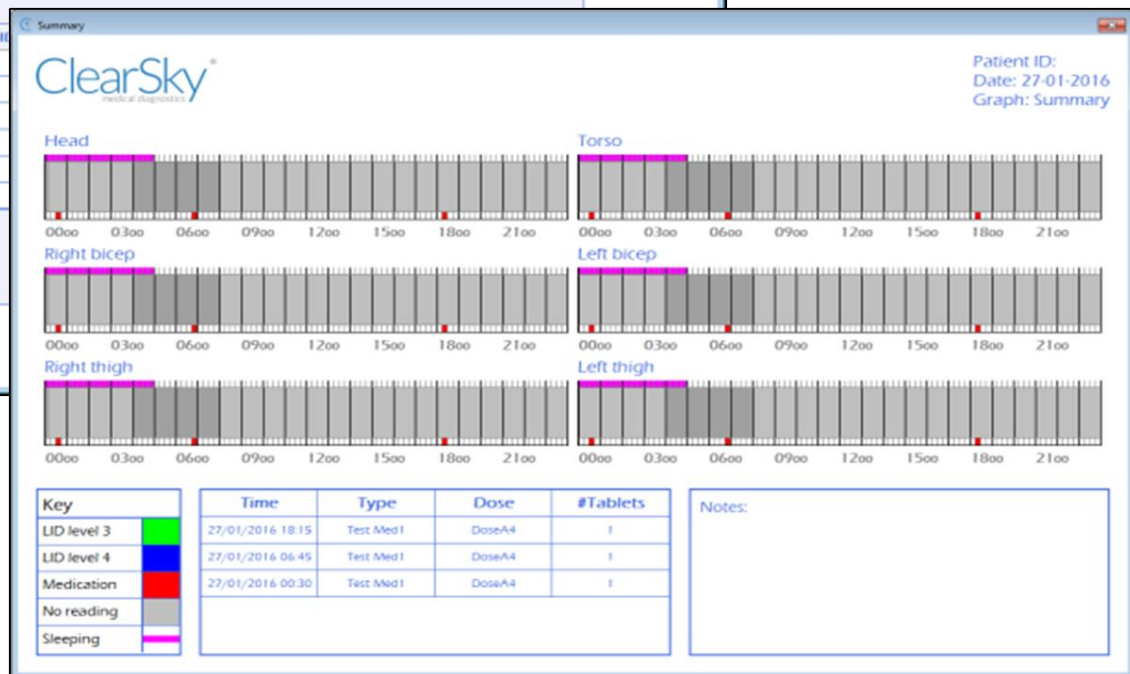
shimmer

Waiting for Shimmers to be docked

Stage 2 of 6 ●

2. Docking Shimmers

Please insert the Shimmers into the Base as shown and click the 'Next' button when all Shimmers are docked.

Location	Shimmer ID
Base6U.01.01	39FF
Base6U.01.02	B640
Base6U.01.03	2A50
Base6U.01.04	8628
Base6U.01.05	9113
Base6U.01.06	2A3B

Back

Summary

ClearSky®
medical diagnostics

Patient ID:
Date: 27-01-2016
Graph: Summary

Head

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Torso

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Right bicep

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Left bicep

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Right thigh

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Left thigh

00:00 03:00 06:00 09:00 12:00 15:00 18:00 21:00

Key	
LID level 3	🟩
LID level 4	🟦
Medication	🟥
No reading	⬜
Sleeping	🟪

Time	Type	Dose	#Tablets
27/01/2016 18:15	Test Med1	DoseA4	1
27/01/2016 06:45	Test Med1	DoseA4	1
27/01/2016 00:30	Test Med1	DoseA4	1

Notes:

9DoF Calibration

- **Developed at:** Shimmer Research

- **Platform**: Android

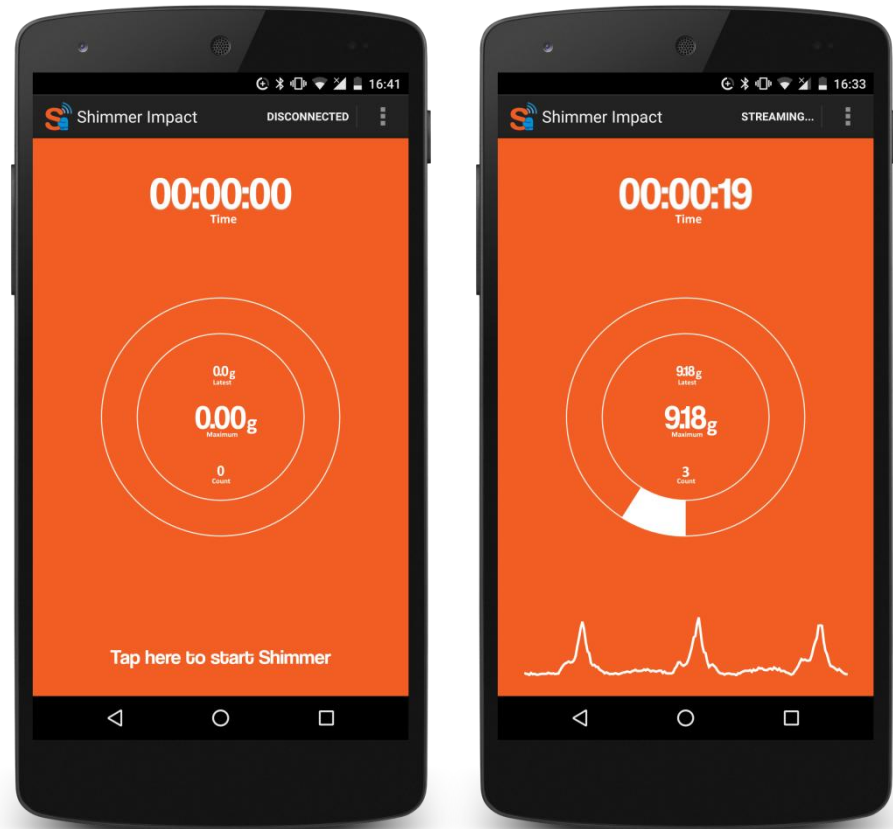- **Date**: 2015

- **Role**: Sole Developer – From Scratch

Automated procedure for calculating the calibration parameters for a tri-axial accelerometer, gyroscope and magnetometer

▶ YouTube

Shimmer Impact

- **Developed at:** Shimmer Research

- **Platform**: Android

- **Date**: 2014

- **Role**: Sole Developer – From Scratch

App to record high impact events using the Shimmer3 200g accelerometer for tackle bag drills in sports such as rugby and American football

Shimmer ECG Demo

- **Developed at:** Shimmer Research

- **Platform**: Windows (LabVIEW)

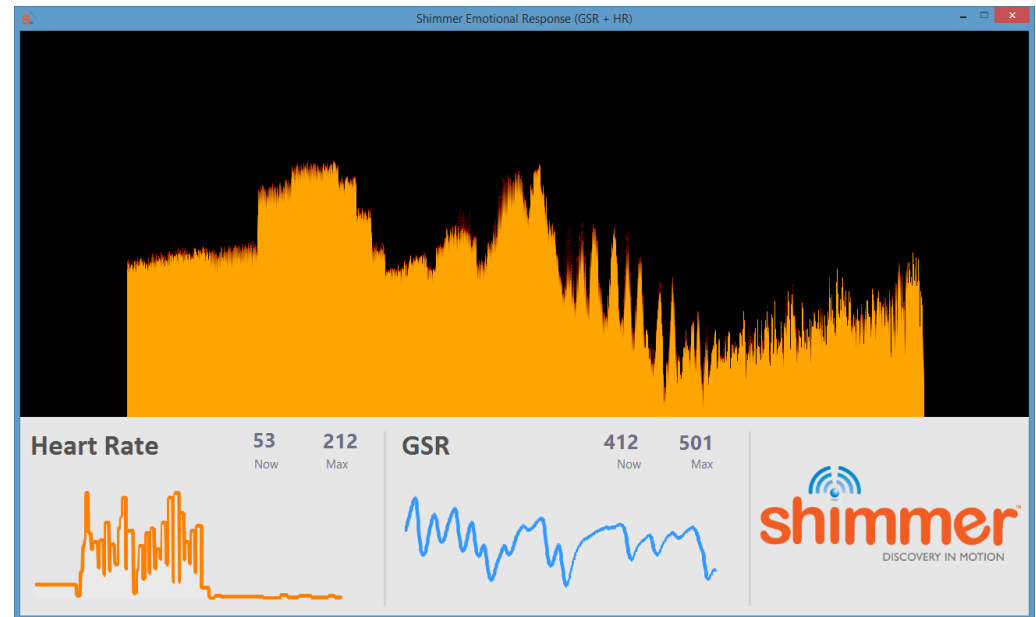- **Date**: 2014

- **Role**: Sole Developer – From Scratch

Marketing demo utilizing accelerometer, ECG, and respiration sensor with respective motion, heart rate and respiration rate algorithms

Shimmer GSR Demo

- **Developed at:** Shimmer Research

- **Platform**: Windows (LabVIEW)

- **Date**: 2014

- **Role**: Sole Developer – From Scratch

Marketing demo utilizing GSR and PPG
sensor with PPG to heart rate algorithm

Shimmer Strain Gauge Demo

- **Developed at:** Shimmer Research

- **Platform**: Windows (LabVIEW)

- **Date**: 2014

- **Role**: Sole Developer – From Scratch

Marketing demo utilizing the strain gauge sensor to see who has the strongest grip strength