Cityzen Sciences

Overview

Gilbert REVEILLON - International MD

Tim Sagar - Head of UK

Cityzen Sciences, spearhead of the Smart Sensing consortium

Supported by bpifrance

Electronic manufacturer

éolane

Sports distributor (cycling, running)

groupe Cyclelab

Cityzen Sciences

cea leti

MINES TELECOM INSTITUT Mines-Télécom

Academic Lab specialized in sensors and data

PAYEN

Fabric manufacturer

Smart Sensing technology : the D-Shirt™

Textil embedded sensors
Measure of the physiological data

Sensors (2014)

ECG
GPS
Accelerometer 6-axis
Altimeter
Bluetooth Connector

Removable case
Recovery of all the data

Planned sensors (2015-16)

Temperature (both central and local)
Respiration
Hygrometry
Muscles activity (EMG / MMG)

Real time monitoring

Data management,
indicators construction

Recorded Analysis

USP = Wireless data capture & broadcast with Bluetooth low energy
@ll ready for mass production

Cityzen Sciences

OUR PRODUCTS

REMOVABLE GATEWAY

EMBEDDED SMARTSENSORS

1ST SMART CYCLING SHORTS IN THE WORLD

D-SHIRT ™

CYCLING SHORTS

INDICATORS AVAILABLE

SPEED	RACE COURSE	PHYSIO	STRIDE AND SPACE
Time at High speed Current speed Average Speed	Altitude Elevation Distance	Heart Rate (HR) Alert Zone (HR) HR Variability	Stride Count Stride Frequency Pedaling frequency* Time out of Saddle*

* valid indicators for cycling shorts only

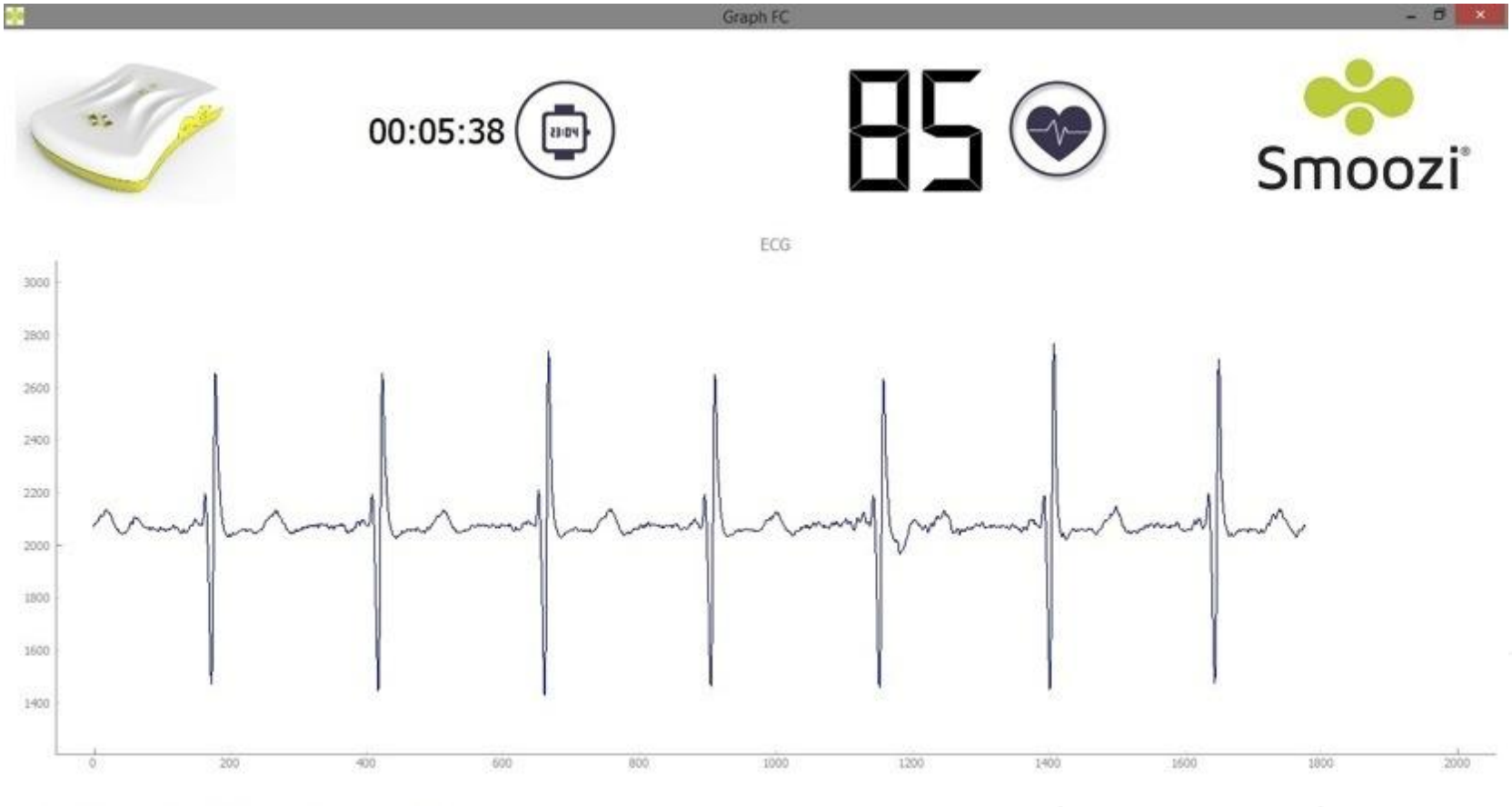
01.

Health and Wellness

Health - What can we hope to capture?

- Standing or sitting
- Heart rate
- ECG
- Body temperature
- Man down
- Humidity
- Location
- Blood pressure
- Posture

Health – actual ECG trace from D-Shirt



Remote monitoring benefits

Rapidly ageing population

- £1000 per day for a hospital bed
- £500 per week in a care home
- £500 per month for 4 visits at home per day

Prevention rather than cure

- With data analytics identify those most at risk of falling and then monitor to catch and then support those most at risk

Understand why high levels of readmission

- Spinal injury patients often re-admitted soon after returning home – why?

Accelerated and more accurate drugs testing

Digital Health Challenge in the USA

"half of the monstrous $2.7 trillion expended annually in the US on health care …

is spent on conditions linked to everyday habits and choices such as

- overeating,
- under-exercising,
- and smoking.

Individual self-management was held up as the ultimate key to controlling the physical and financial costs of these "lifestyle diseases."

Obamacare; affordable health act

http://www.technologyreview.com/view/526576/obamacare-meets-wearable-technology/?utm_campaign=newsletters&utm_source=newsletter-daily-all&utm_medium=email&utm_content=20140507

02.

Sport

Cityzen sports partners

ASVEL Toulouse St. Etienne
PABA

Basketball Rugby Soccer
Basketball

Real time demonstration at Mobile Asia

BBC 2e reportage 7 mars 2014
26464288?utm_content=buffer1
paign=buffer

BBC | Sign in | News | Sport | Weather | Capital | Future | Shop | TV | Radio | More... | Search

WORLD NEWS Click

Home | Episodes | Clips | Gadgets | Spencer Kelly | About Click

The sports technology that aims to boost performance

DURATION: 02:16

Could technology help give you the edge in sport? BBC Click's LJ Rich meets the basketball team using vests to record their heart rate and other data from their bodies and tries a tennis racquet which analyses playing style.

Available since: Tue 11 Mar 2014

Share

More clips from 01/03/2014 GMT

- Could an app improve your eyesight? DURATION: 02:08
- A look at the Samsung Galaxy S5 DURATION: 01:08
- A look at Nokia's low cost smartphones DURATION: 01:23
- The anti-snoop Blackphone DURATION: 02:16
- 3D mapping on a smartphone DURATION: 01:44

See all clips from 01/03/2014 GMT

More clips from Click

http://www.bbc.com/news/technology-26464288

What can we hope to monitor for sport?

- Location, speed and distance via GPS
- Acceleration and impact via 9 axis accelerometer
- Height via altimeter
- Cycle cadence
- Heart Rate
- ECG
- Stress level

Requirements for sports applications

- Light weight
- Tear resistance
- Flexibility for comfort
- Long range interference resistant air interface for real time monitoring of teams
- Real time analytics via geo-time series big data platform

Uses of sport analytics data

- Performance improvement
- Audience information for broadcasters
- Betting
- Matching of sports partners via social networks
- Virtual boxing competitions via sensor enabled gloves and shoes
- Quantify self