

# CSP TELEMEDICINE REMOTE MONITORING MEDICAL DEVICES



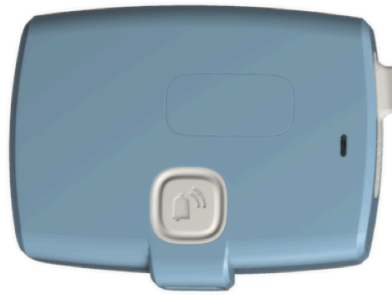
CSP – TI, JULY 5<sup>th</sup> 2016

DESIGN Solid White



Ultrasonic welding

DESIGN Tech-Med

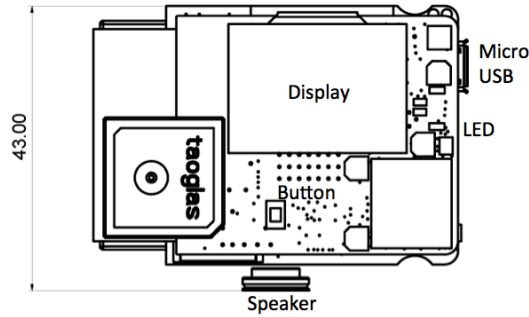
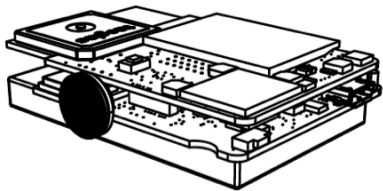
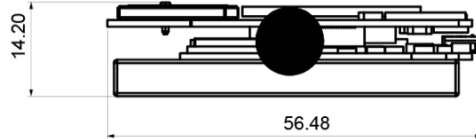


Ultrasonic welding

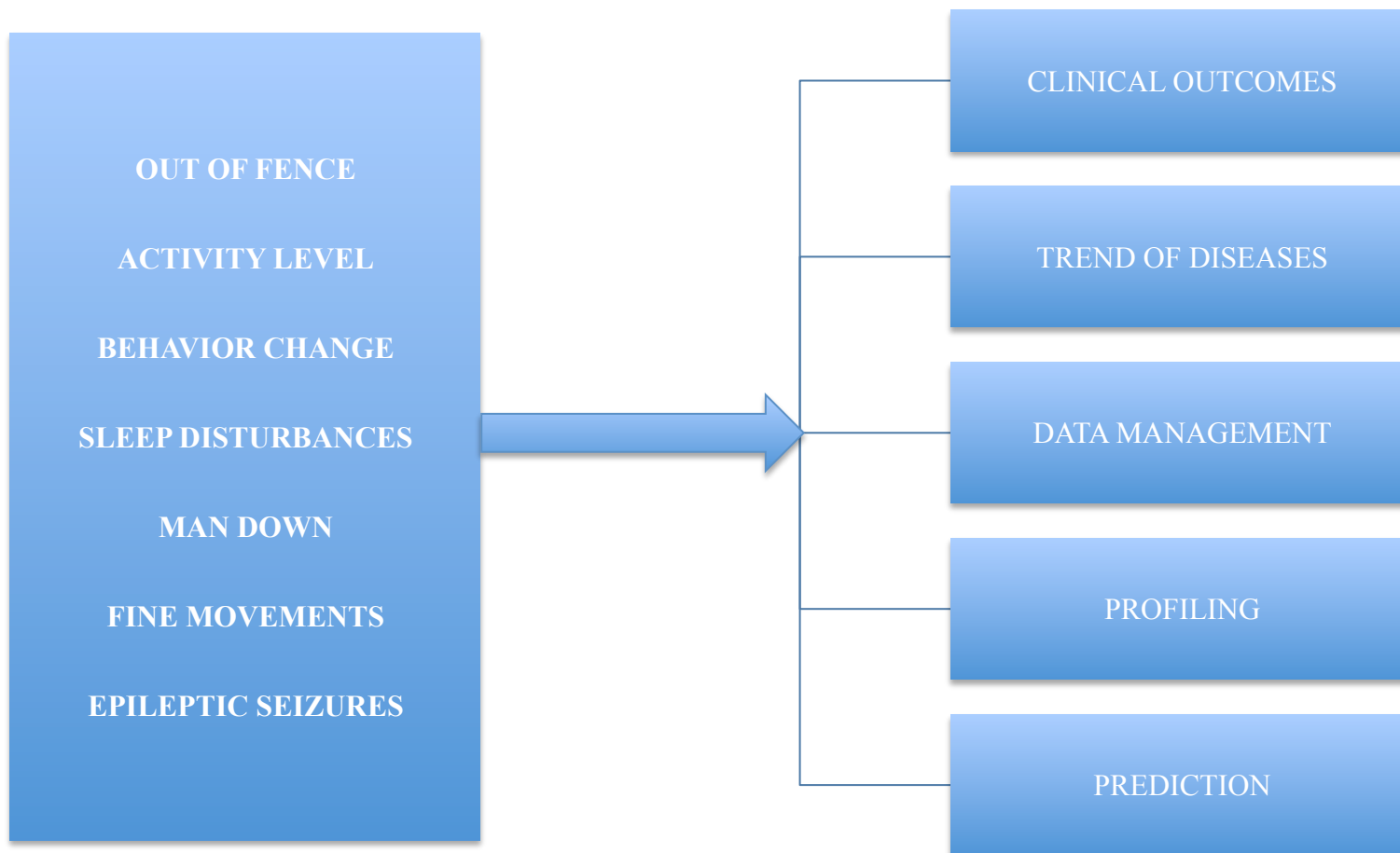
DESIGN Screws



Screws



# AUTOLEARNING WEAREABLE SHOCK-WATERPROOF PATENT PENDING MEDICAL DEVICES



INTENDED USE	SUFFERING PEOPLE	COSTS / Y
<b>DEMENTIA</b> <i>Data on Alzheimer's, that is the 70-80% of all the Dementia.</i>	ITA 1.241.000 (260.000 NEW PATIENTS/Y) U.S.A 9.400.000 Europe 10.500.000  WORLDWIDE 140.000.000 EXTIMATED IN 2050	37 BILL \$ 226 BILL \$ <b>ITALY: AVERAGE DIRECT/INDIRECT COST/PATIENT/Y &gt; 70 K WITH 60% IN CHARGE ON FAMILY – AIMA - CENSIS</b>  <b>2015 WORLDWIDE 818 BILL \$, 1 TRILLION \$ IN 2018</b>
<b>MIDDLE COGNITIVE IMPAIRMENT</b>	MANY MILLIONS OF PATIENTS DEVELOPING DEMENTIA IN NEXT YEARS	N.A. TO BE CLINICALLY TESTED WITH BESTA / HORIZON 2020
<b>PARKINSON'S</b>	ITA 250.000 U.S.A 1.000.000 (60.000 NEW PATIENTS/Y) Europe 1.000.000	N.A. 25 BILL \$ N.A.
<b>EPILEPSY</b>	ITA 500.000 U.S.A 3.000.000 Europe 6.000.000	N.A. 15,5 BILL \$ N.A.
<b>AUTISM</b>	ITA 880.000 U.S.A 3.500.000	N.A. 35 BILL \$ (COST FOR CHILDREN: FROM 11 TO 60.9 BILL \$)
<b>SLEEP DISTURBANCES</b>	ITA 7-10.000.000 U.S.A 50-70.000.000	IN ITALY POLYSOMNOGRAPHY FROM 200 TO 2.000 \$ / EXAM, IN US FROM 1.100 TO UP OF 4.800 \$ / EXAM
<b>HEART DISEASES *</b>	IN U.S. 85 MILLIONS SUFFER FROM CARDIOV. DIS. (THE 50% OF AFRICAN AMERICANS). EVERY YEAR 735.000 ISCHAEMIC MYOCARDIAL ATTACK (IMA)	U.S. IMA AND STROKE * > 320 BILL/Y FOR HEALTH EXPENDITURE AND LOST PRODUCTIVITY
<b>STROKE *</b>	ITA 200.000 U.S.A 800.000 WORLD ESTIM. 15.000.000	14,5 BILL \$ 36,5 BILL \$ (ONLY STROKE*)
<b>FALLS AND FRACTURES</b>	MILLIONS OF PEOPLE AGED > 65 AA 33 % AGED PEOPLE FALL / Y IT IS THE FIRST ACCIDENTAL CAUSE OF DEATH	USA 2013 = 34 BILL – AV COST 35.000 \$ / P NOT INCLUDED WORK TIME LOST, LONG TERM EFFECTS, REHAB
<b>MULTIPLE SCLEROSIS</b>	WORLD ESTIM. 1.000.000	N.A.
<b>MUSCLE DYSTROPHY</b>	WORLD ESTIM. 0,013% OF PEOPLE	N.A.

## OUR PLUS

UNIQUE CE MEDICAL DEVICE & SOLUTION  
INTENDED USES FLAGGED BY USER

LONG LASTING BATTERIES

SPECIFIC “TAILORED” ALGORITHMS

AUTO LEARNING SOLUTION

AUTOMATIC UPDATES

GATEWAY MODE AVAILABLE

# OUR VALUE

DEVICE => EVENTS => ALGORITHMHS => AUTO LEARNING => MONITORING HABITS => PROFILING

**PERSONAL AND CROWD  
DATA COLLECTION  
& MANAGEMENT**

**PROFILING &  
PREDICTION**

CAREGIVERS – PATIENTS – PHYSICIANS – HOSPITALS –  
MINISTRY OF HEALTH – PHARMA – INDUSTRIES – INSURANCES

**PROFILING** —————> **PREDICTING**

**PATIENT BEHAVIOR AND HABIT  
PROFILING ON PAST AVERAGE DATA**



**ON CROWD LOGISTIC REGRESSION**



**PREDICTION**

**OUR IOT VISION**  
***“E PLURIBUS UNUM”***

**BEHAVIOR PROFILING & MANAGEMENT**

**PROGNOSTIC PREDICTION OF WANDERING  
ELOPEMENT, GOING LOST, FALL DOWN ETC.**

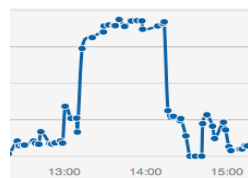
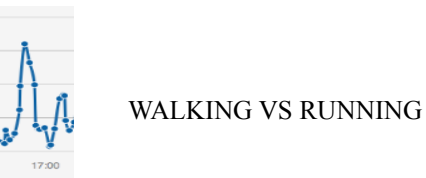
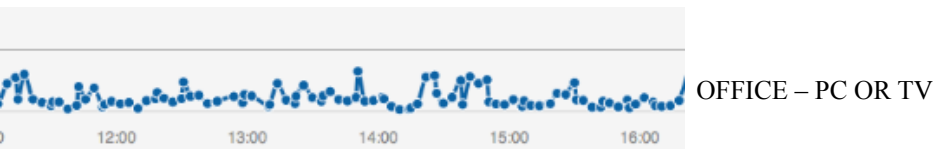
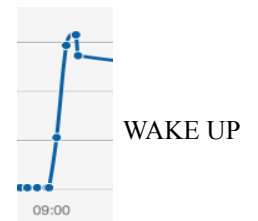
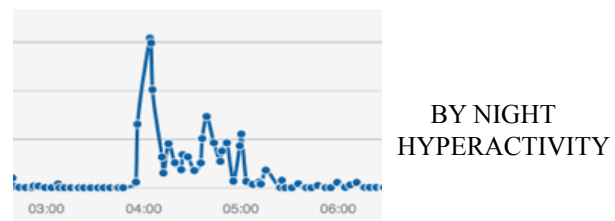
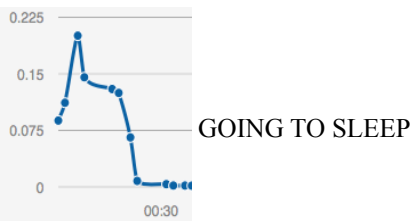
**EVALUATION AND VALIDATION  
OF BMT OR NEW THERAPIES**

**CLINICAL OUTCOMES**

**TREND OF DISEASES**

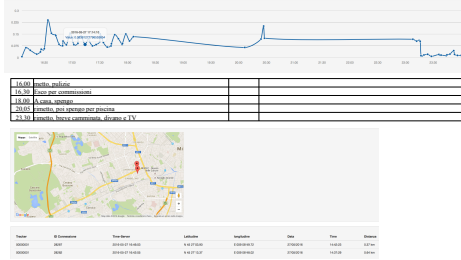


# A.L. GRAPHIC EXAMPLE

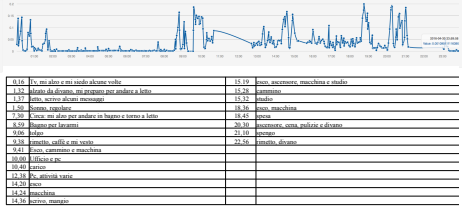


# A.L. AND OUT OF FENCE EXAMPLE

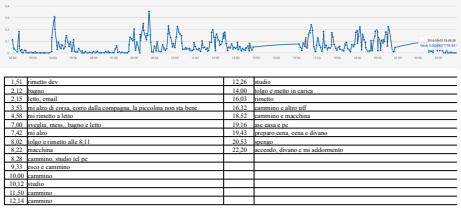
01- 27.5) 0009 – GRAFICO E DIARIO



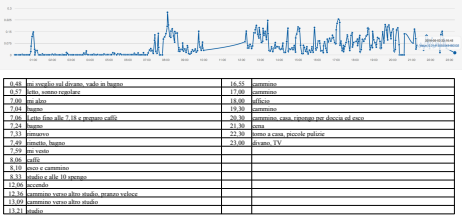
001- 30.4 – GRAFICO E DIARIO



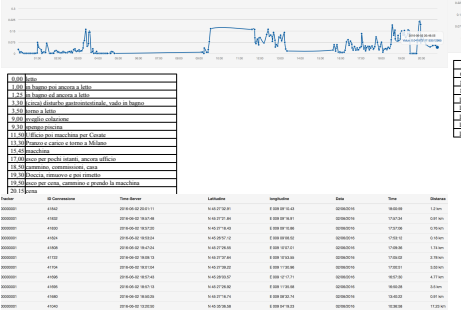
001- 2.5 – GRAFICO E DIARIO



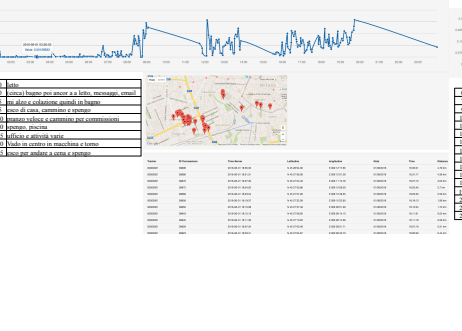
001-3.5 – GRAFICO E DIARIO



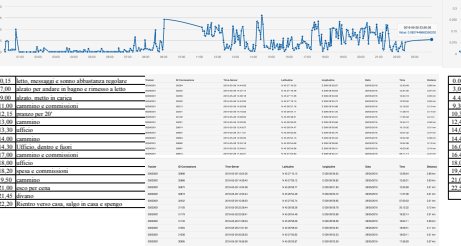
01-2.6) 0014 – GRAFICO E DIARIO



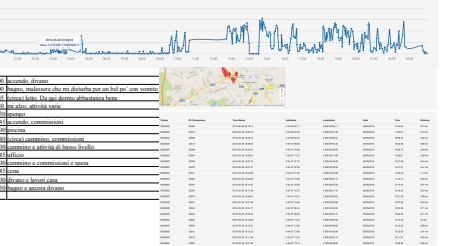
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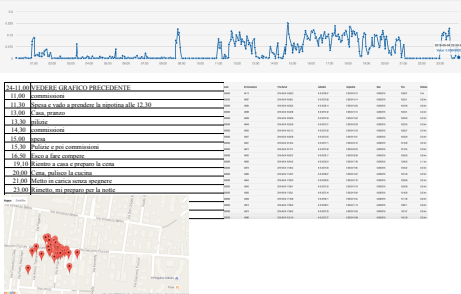
01- 28.5) 0010 – GRAFICO E DIARIO



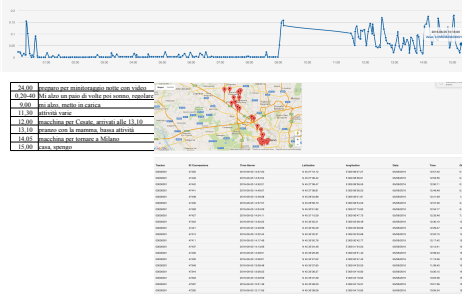
01-29.5) 0011 – GRAFICO E DIARIO



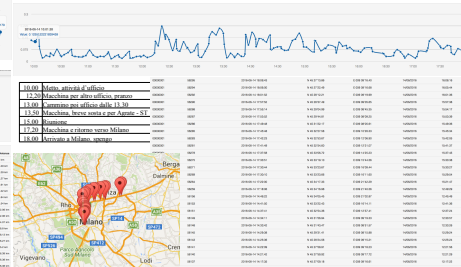
TR 03 – 4.6.2016 – GRAFICO E DIARIO GIORNO E NOTTE



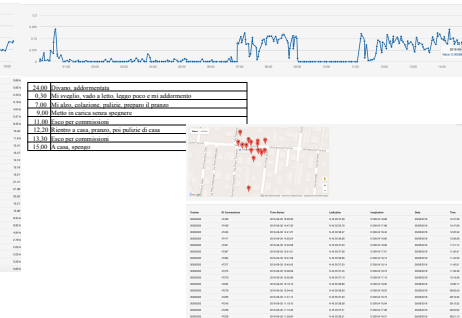
0017- 01 (5.6) – GRAFICO E DIARIO



TR 01 - 14.6.2016 – GRAFICO E DIARIO



TR 3 – 5.6.2016 – GRAFICO E DIARIO





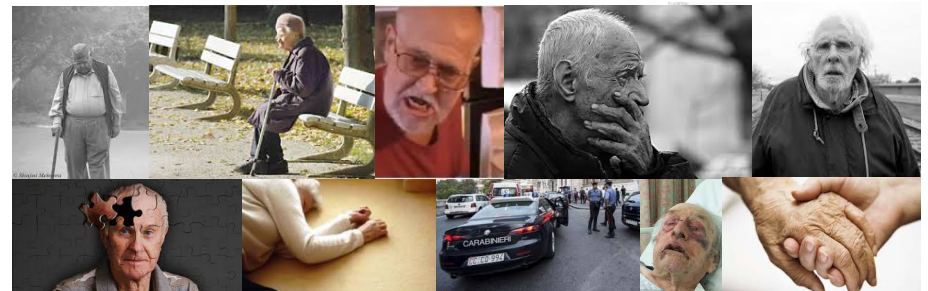
# ALZHEIMER'S DISEASE

## 9-AXIS R.M. MEDICAL DEVICES

1. INTENDED USE: HOSPITAL



2. INTENDED USE: DAILY LIFE



# SLEEP DISTURBANCES

## 9-AXIS R.M. MEDICAL DEVICES TO BE PRESCRIBED BY NEUROLOGISTS ON WRIST OR ANKLE OR BOTH



### 1. INTENDED USE: HOSPITAL



### 2. INTENDED USE: DAILY LIFE





**ALZHEIMER'S**

**IOT  
SOLUTION**

**ON EVENT  
R.M. DATA**

**LONG LASTING  
BATTERIES**

**TAILORED  
ALGORITHMS  
& SAMPLING**

**FRIENDLY USE**

**ALERT ON CAREGIVERS'  
SMARTPHONE**

**24/7 OPERATING ROOM**

**FALL DOWN ALERT**

**OUT FENCE ALERT**

**BEHAVIOR CHANGE**

**TREND OF DISEASES**

**CLINICAL OUTCOME**

**FALL PREDICTION**

**PROFILING**



**SLEEP  
DISTURBANCES**

**IOT  
SOLUTION**

**CONTINUOUS  
OR ON EVENT  
R.M. DATA**

**EVENTS  
WARNING**

**TAILORED  
ALGORITHMS  
& SAMPLING**

**DIAGNOSIS**

**ASSESSMENT OF  
PERSONAL BMT**

**BEHAVIOR CHANGE**

**FRIENDLY USE**

**FALL DOWN ALERT**

**TREND OF DISEASES**

**CLINICAL OUTCOME**

**FALL PREDICTION**

**PROFILING**

**GATEWAY MODE**





# AUTISM

**49%**  
OF CHILDREN WITH AUTISM "ENGAGE IN ELOPEMENT BEHAVIOR, WITH A SUBSTANTIAL NUMBER AT RISK FOR BODILY HARM."  
Publinter 2012, esp.org  
For information on wandering/elopement prevention, visit [avaare.org](http://www.avaare.org)  
www.avaare.org

## 9-AXIS R.M. MEDICAL DEVICES

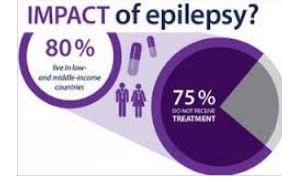


### 1. INTENDED USE: HOSPITAL



### 2. INTENDED USE: DAILY LIFE

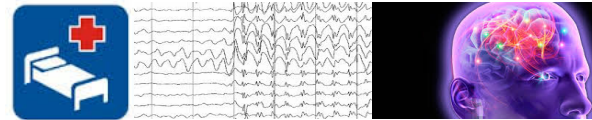




# EPILEPSY

## 9-AXIS R.M. MEDICAL DEVICES TO BE PRESCRIBED BY NEUROLOGISTS

1. INTENDED USE: HOSPITAL



2. INTENDED USE: DAILY LIFE  
(WHERE- WHEN – HOW LONG)





**AUTISM**

**IOT  
SOLUTION**

**ON EVENT  
R.M. DATA**

**LONG LASTING  
BATTERIES**

**TAILORED  
ALGORITHMS  
& SAMPLING**

**FRIENDLY USE**

**OUT FENCE AND  
FALL DOWN ALERT  
ON CAREGIVERS'  
SMARTPHONE**

**24/7 OPERATING ROOM**

**BEHAVIOR CHANGE**

**CLINICAL OUTCOME**

**PROFILING  
& EVENT PREDICTION**

**CRISIS PREVENTION**



**EPILEPSY**

**VERTICAL  
& IOT  
SOLUTION**

**CONTINUOUS  
OR ON EVENT  
R.M. DATA**

**EVENTS  
WARNING**

**TAILORED  
ALGORITHMS  
& SAMPLING**

**DIAGNOSIS**

**FRIENDLY USE**

**24/7 OPERATING ROOM**

**FALL DOWN & SEIZURES  
ALERT  
(WHERE – WHEN)**

**TREND OF DISEASES**

**ASSESSMENT OF PERSONAL BMT**

**CLINICAL OUTCOME**

**PROFILING**

**GATEWAY MODE FOR EEG**





# PARKINSON'S DISEASE



## TWO 9-AXIS R.M. MEDICAL DEVICES TO BE PRESCRIBED BY NEUROLOGISTS ON WRIST OR ANKLE OR BOTH

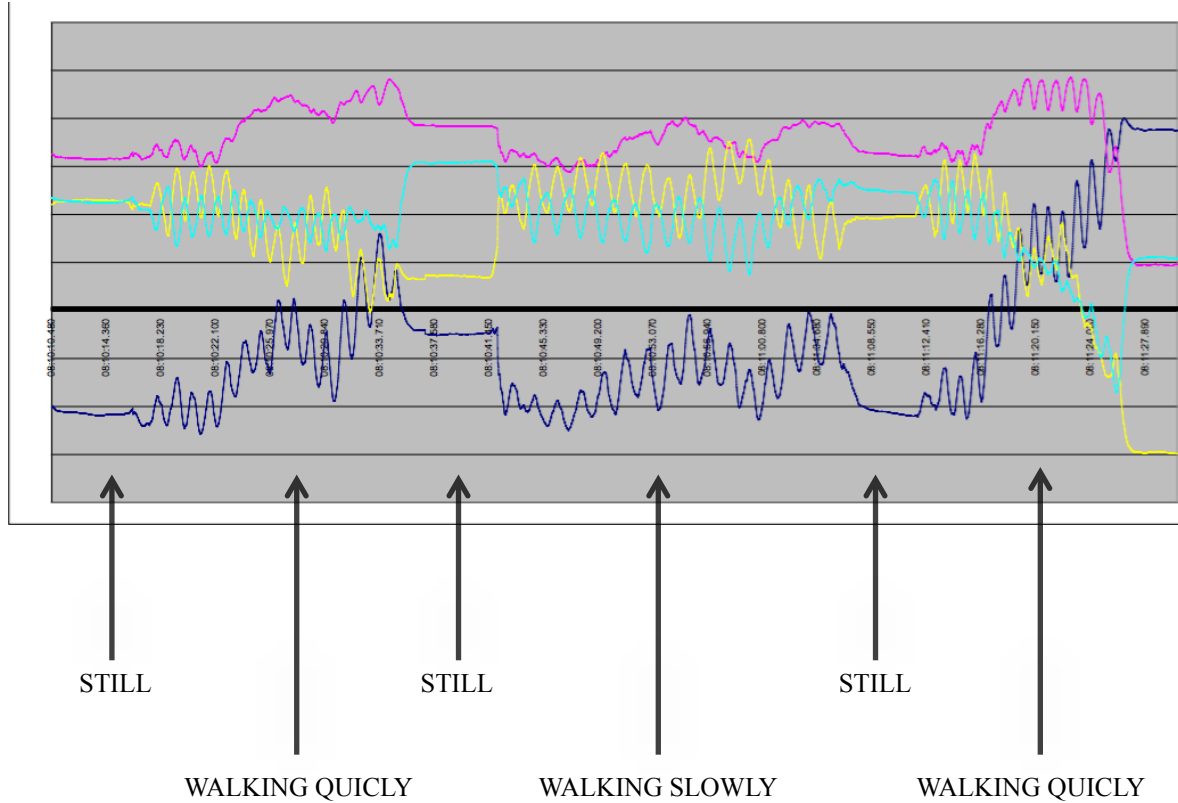
### 1. INTENDED USE: HOSPITAL



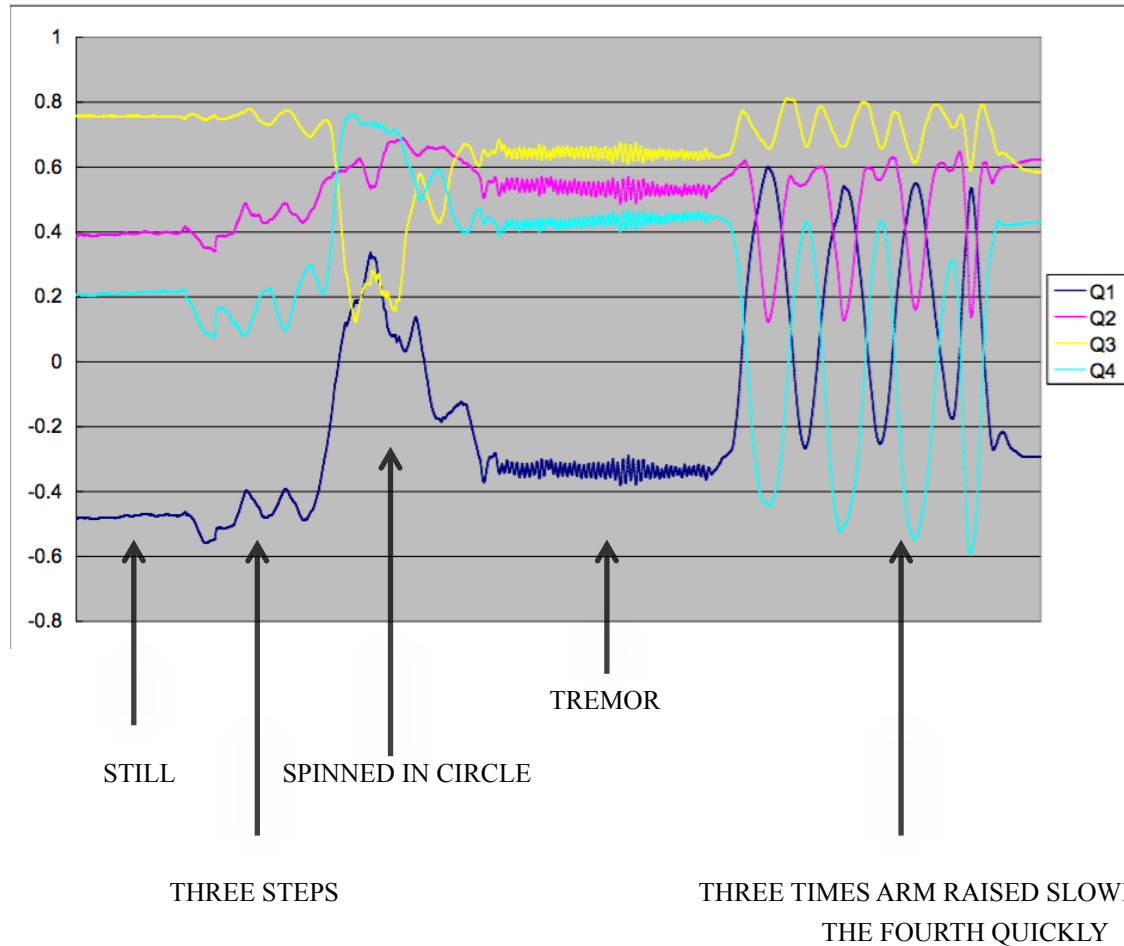
### 2. INTENDED USE: DAILY LIFE



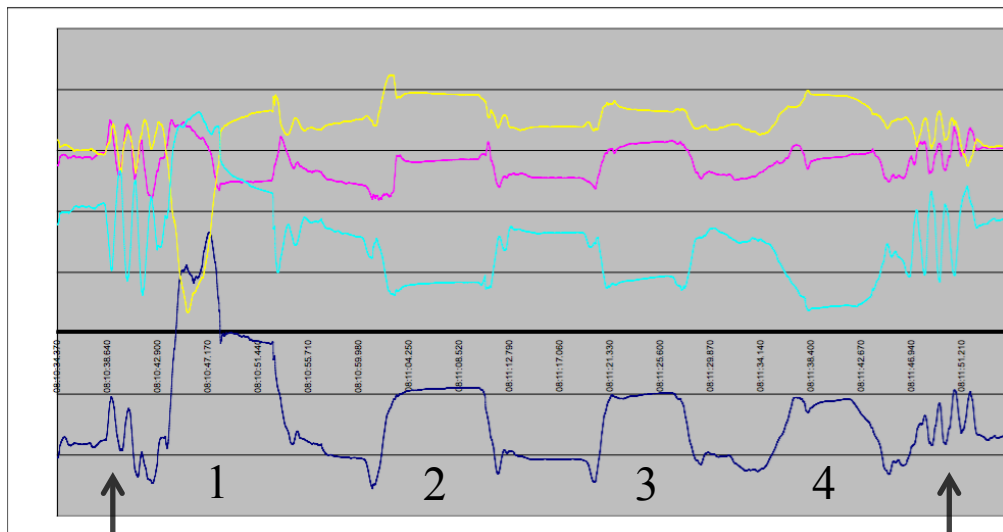
# A. ACCURATE MOVEMENT DETECTION



## B. ACCURATE MOVEMENT DETECTION



## C. ACCURATE MOVEMENT DETECTION

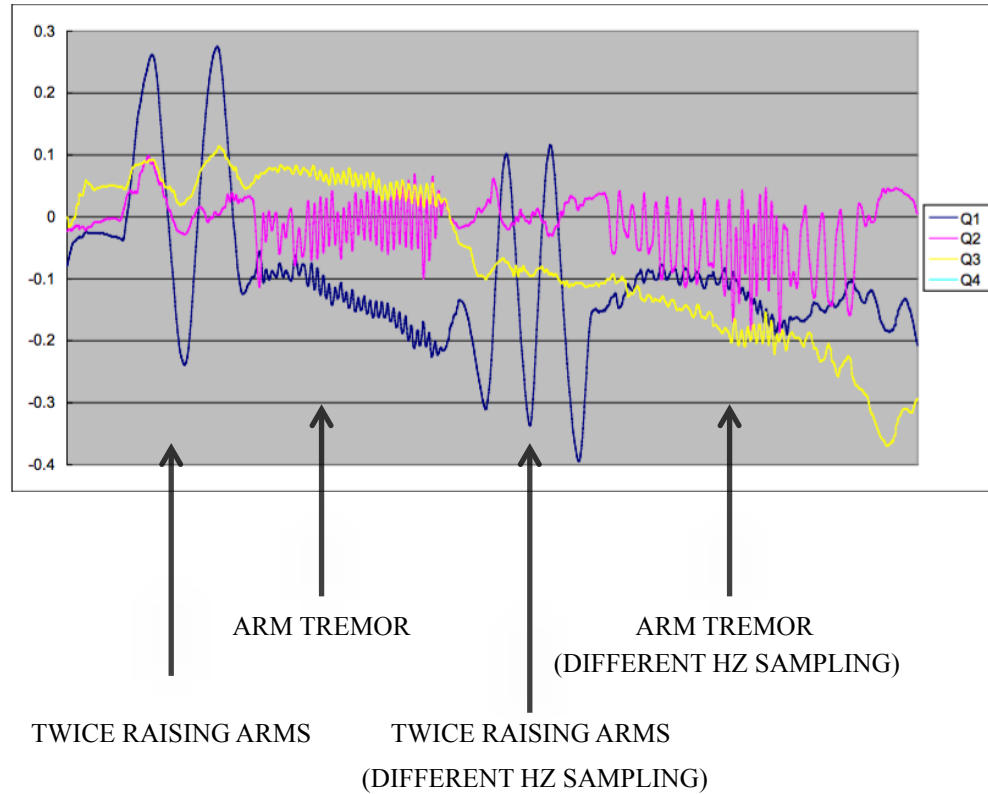


4 STEND UP AND SIT DOWN, THE LAST ONE SLOWLY

FOUR STEPS

FOUR STEPS AND STILL

## D. ACCURATE MOVEMENT DETECTION





**STN - DBS IMPLANT**

**VERTICAL  
SOLUTION**

**CONTINUOUS  
R.M. DATA**

**TAILORED  
KINEMATIC  
ALGORITHMS  
& SAMPLING**

**STRONG AND FINE  
MOTOR SYMPTOMS  
R.M.**

**CALIBRATING  
ELECTRICAL  
PARAMETERS**

**ON – OFF STATUS**

**FASCICULATION & TREMORS**

**BRADYKINESIA – DYSKINESIA**

**POSTURAL INSTABILITY**



**DAILY LIFE**

**IOT  
SOLUTION**

**ON SCHEDULED  
TIME OR EVENT  
R.M. DATA**

**LONG LASTING  
BATTERIES**

**TAILORED  
KINEMATIC  
ALGORITHMS  
& SAMPLING**

**ASSESSMENT OF  
PERSONAL BMT**

**PATIENTS SELECTION  
FOR DBS IMPLANT**

**BEHAVIOR CHANGE**

**FRIENDLY USE**

**FALL DOWN ALERT**

**ALL MOTOR SYMPTOMS**

**SLEEP DISTURBANCES**

**TREND OF DISEASES**

**FALL PREDICTION**

**LASER POINTER**

**SIMPLE GATEWAY MODE**

# CONSOLIDATING AND GROWING THE MARKET - INTERCONNECTIONS

## TLC

UNIQUE E-HEALTH SOLUTION IN  
A GROWING IOT MARKET

EXCLUSIVITY => FIDELITY  
AND COSTUMER DEVELOPMENT

POSITIVE RETURN OF BRAND

## PHARMA

INNOVATION

CLINICAL OUTCOME

RESEARCH

THERAPIES

## MEDICAL INDUSTRIES

MEDTRONIC™ - BOSTON SCIENTIFIC™

CLINICAL TEST ON DBS

PATIENT'S SELECTION

REMOTE MONITORING BEFORE - AFTER DBS

OUTCOME & TREND OF DISEASE

## INSURANCES

COSTUMER DEVELOPMENT

TAILORED PRODUCTS

TREND OF DISEASE ADJUSTMENT

R.M. PEOPLE  
SUFERING FROM  
NEUROLGICAL DISEASES

## MORE USE CASES

### 9-AXIS R.M. MEDICAL DEVICES W/O PRESCRIPTION

1. AGEING PEOPLE LIVING ALONE



2. REST / NURSING HOME



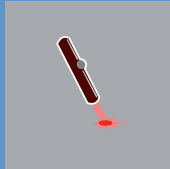
3. USUAL FALLING DOWN PEOPLE





# NEXT STEPS

## LASER POINTER



HELPING PEOPLE DURING FREEZING

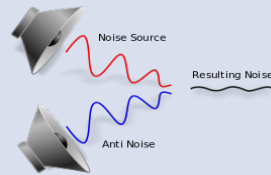
## GATEWAY MODE

BODYGUARDIAN™ - SPO2 - GLUCOMETER

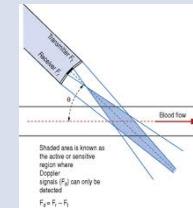
ELECTROMYOGRAPHY - EMG

ELECTROENCEPHALOGRAPHY - EEG

## NULLIFYING NOISES PRODUCING BEHAVIORAL CHANGES & SEIZURES



## HEART RATE & BLOOD PRESSURE REMOTE MONITORING



**SAME FUNCTIONS BUT  
IMPLANTABLE DEVICE**



**THANK YOU**

**MARCELLO RUSPI**  
**VASCULAR SURGEON**

CSP TELEMEDICINE S.r.l.  
*Care, Save, Prevent*

VIA BARTOLOMEO D'ALVIANO, 18  
20146 MILAN – ITALY

[WWW.CSPTELEMEDICINE.IT](http://WWW.CSPTELEMEDICINE.IT)  
[WWW.VIDEOMEDICINE.COM](http://WWW.VIDEOMEDICINE.COM)