

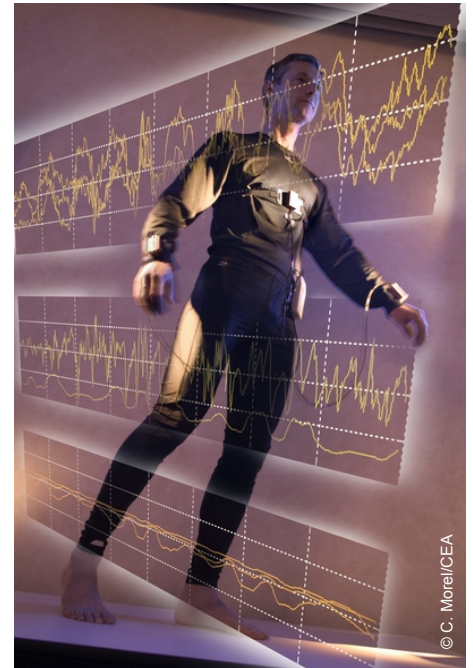
Bringing motion into consumer products

OCOVA - September 07

Bruno Flament

Mission

Movea
is the original provider of
“*Wear 'n Move*” solutions
for motion analysis



« *Wear 'n Move* » Benefits

- ***You “Move”, You can’t Wear***

- + Performance
- Room set-up
- Autonomy issues: cables, limited freedom of motion
- Cost



- ***You Wear, You can’t “Move”***

- + Cost/Set-up/Compactness
- Performance is too low
- Only detects basic features
 - E.g. Fall detection



- ***You Wear, You “Move”***

- + Right performance level at the right price

Innovation

- Algorithm based on a dual measurement modality
 - Accelerometers, magnetometers
 - Disrupts the performance/cost ratio
- Co-development of hardware and software
 - Optimization of the sensor and data transfer protocol
- Algorithm uses contextual constraints
 - « Just enough » configuration for ultimate usage performance
- Highly integrated in micro-systems

Technology ...

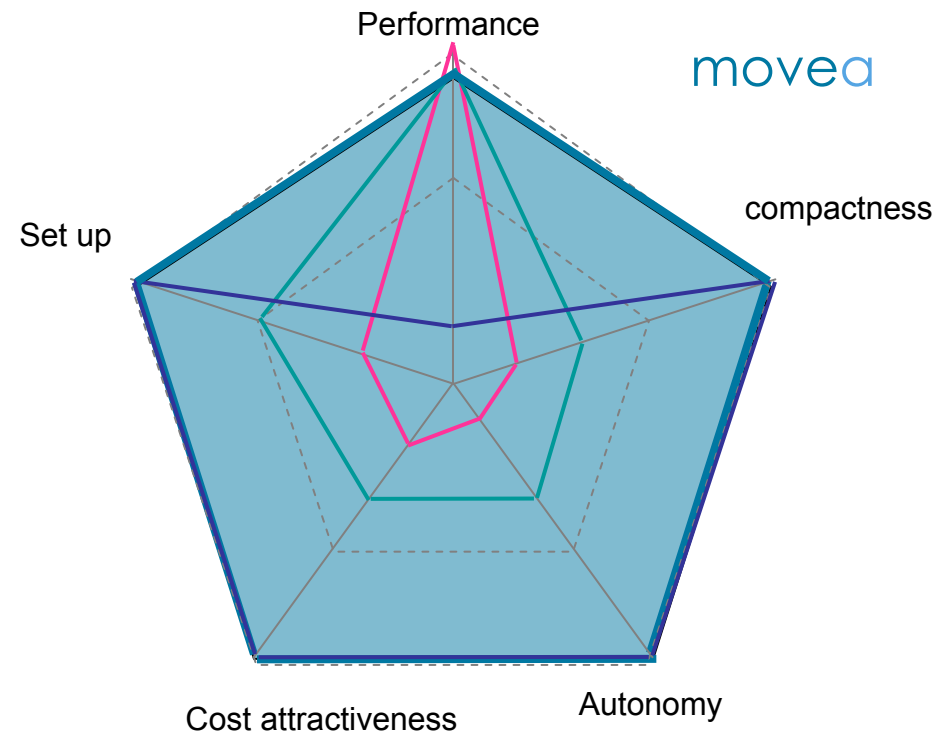
- Movea provides the best combination

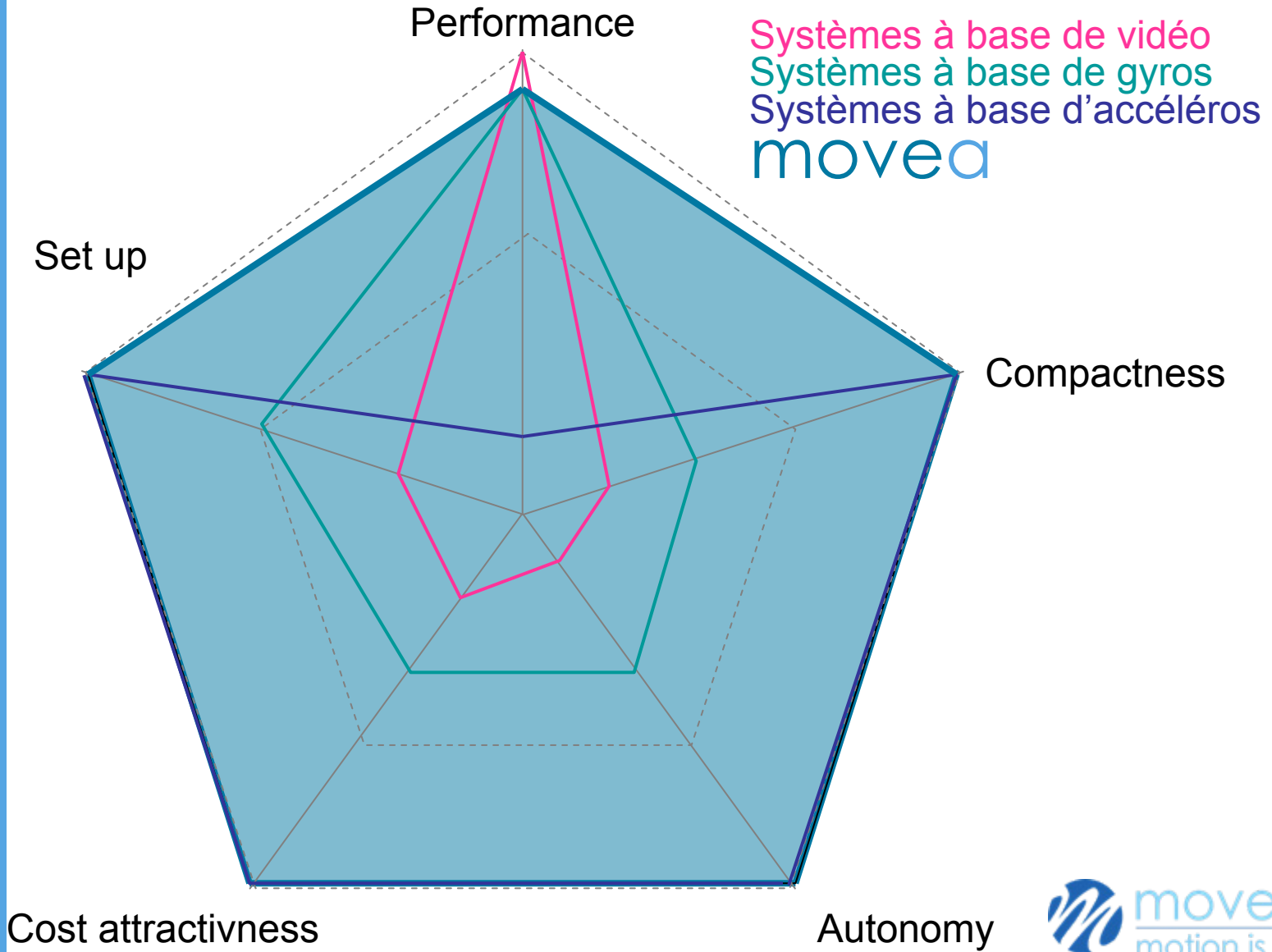
- Performance
- Cost
- Compactness
- Energy Efficiency
- Setup

... the easiest way
to bring human motion
into daily life products

- Solution based on a portfolio of ~20 patents from CEA-LETI

Video based systems
Gyros based systems
Acceleros based systems





Markets / Applications

1

Physical therapy



Gesture measurements,

2

assisted living



Actimetry in daily life,
Energy expenditure,
Fall detection,
Walk analysis,
Balance analysis

...

3

Consumer markets



Man to Machine Interface,
Augmented reality,
Pedestrian navigation,
Gesture recognition

Enabling the motion-based supply chain

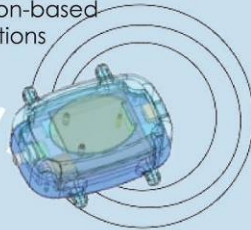
R&D ENVIRONNEMENT

CUSTOMER KNOW-HOW

MDK™*

Motion Development Kit :
SDK + sensors

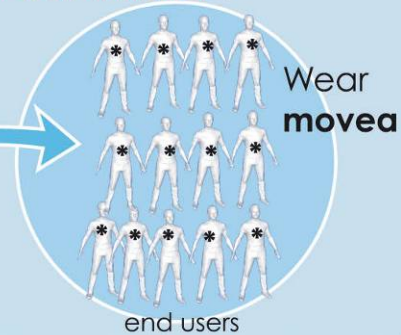
end user product
with motion-based
functions



DEPLOYMENT PHASE

INDUSTRIAL APPLICATION

WEAR'N MOVE™*



*PROVIDED BY movea

Addressing motion capture needs through know-how transfer, partnerships, direct/indirect sales



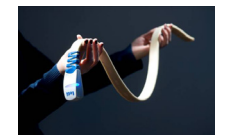
MotionPod



MotionMouse



MotionLog



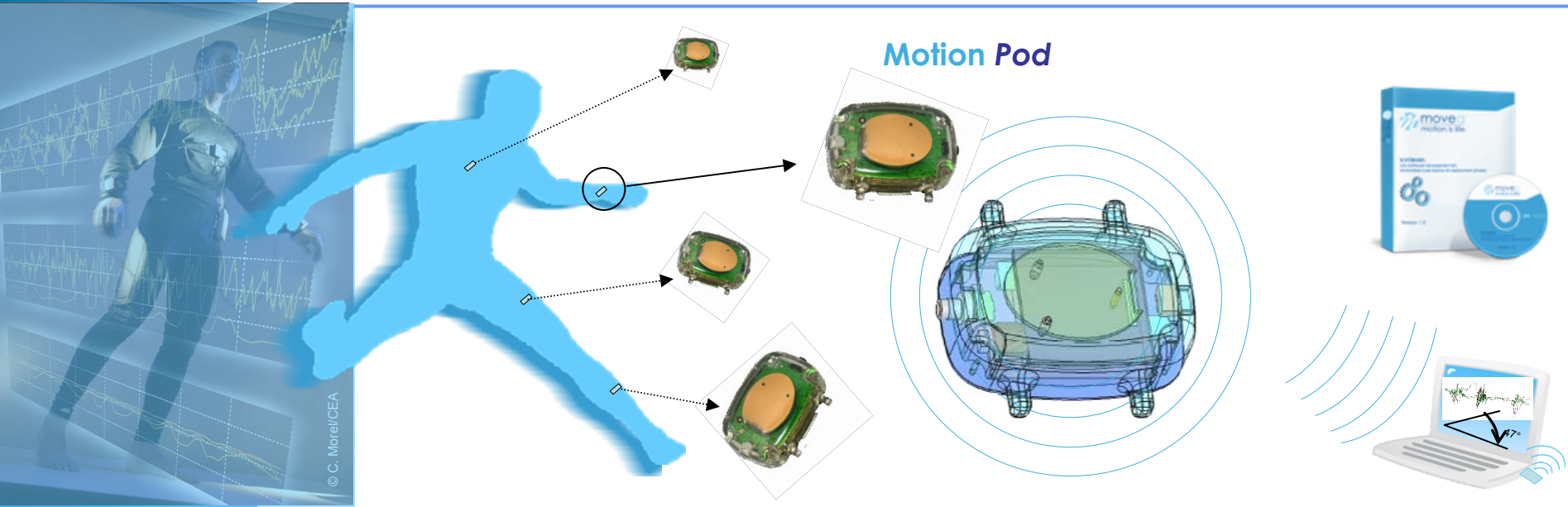
MotionFlex

Motion Development Kit

- Sensor and the reception units
- A comprehensive software for motion analysis



Motion Development Kit - Specifications



Hardware functions

- **Size:**
 - standard wrist watch size
- **Multi sensor nodes :**
 - up to 16 **MotionPod** sensors
- **Autonomy:**
 - >1 day full activity @ 200 Hz
- **Data points:**
 - up to 16 sensors
- **Wireless range:**
 - 30 m
- **Receiver**
 - USB device
- **Option MotionLog :**
 - Data logger

Software functions

- **Estimation**
 - Orientation, posture,
 - Physical activity histogram,
 - Motion capture,
 - Speed, acceleration
- **Detection**
 - Fall detection
 - Rest detection
- **Recognition**
 - Gesture recognition,
 - Gesture counter
- **Others**
 - Frequency filters
 - Tracking filters
 - Heart beat ratio
 - Breath ratio

Technology Roadmap

Hardware

MotionPod



MotionLog



MotionMouse



MotionFlex



MotionPatch



MotionIC



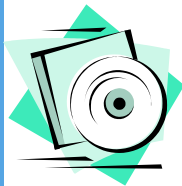
2007

2008

2009

Software

MotionWare



Function Lib

I/O Lib (Sensors, Actuators)

Graphic Lib

Interoperability

Behavioral Models

MotionKernel



Windows Mobile,
Symbian,
Palm OS,
 μ Linux,
DSP

Continuously...

Contacts

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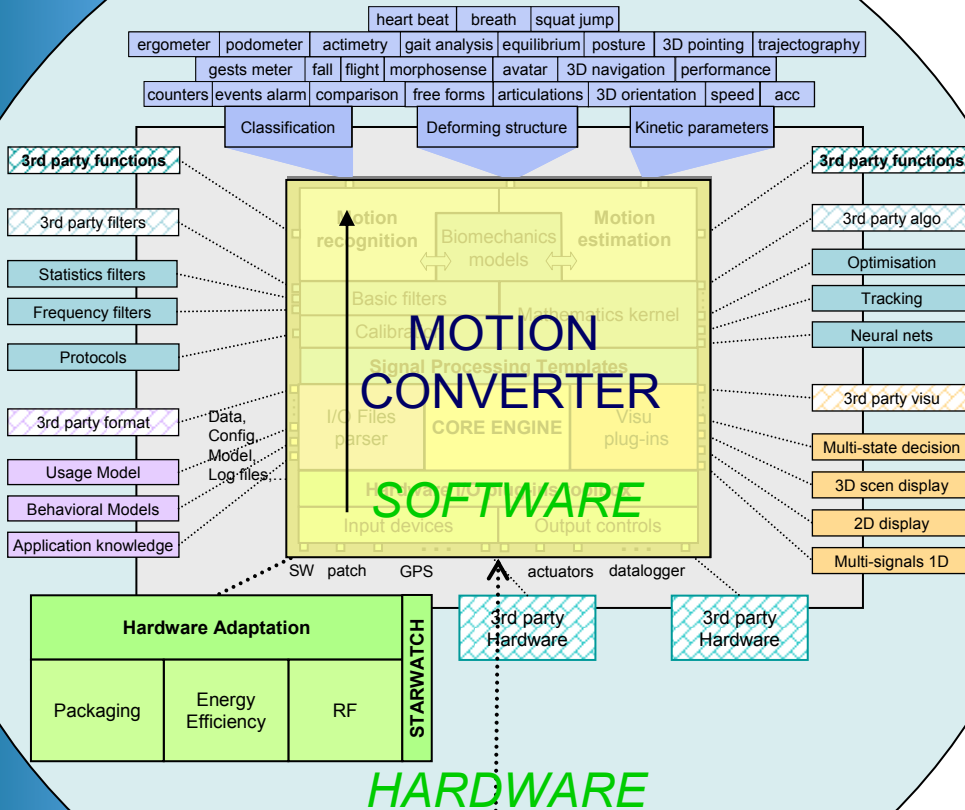
www.movea-tech.com

movea

*Minatec - Boc - 17 rue des martyrs
38054 Grenoble cedex 9*

Technology access : Motion Development Kit

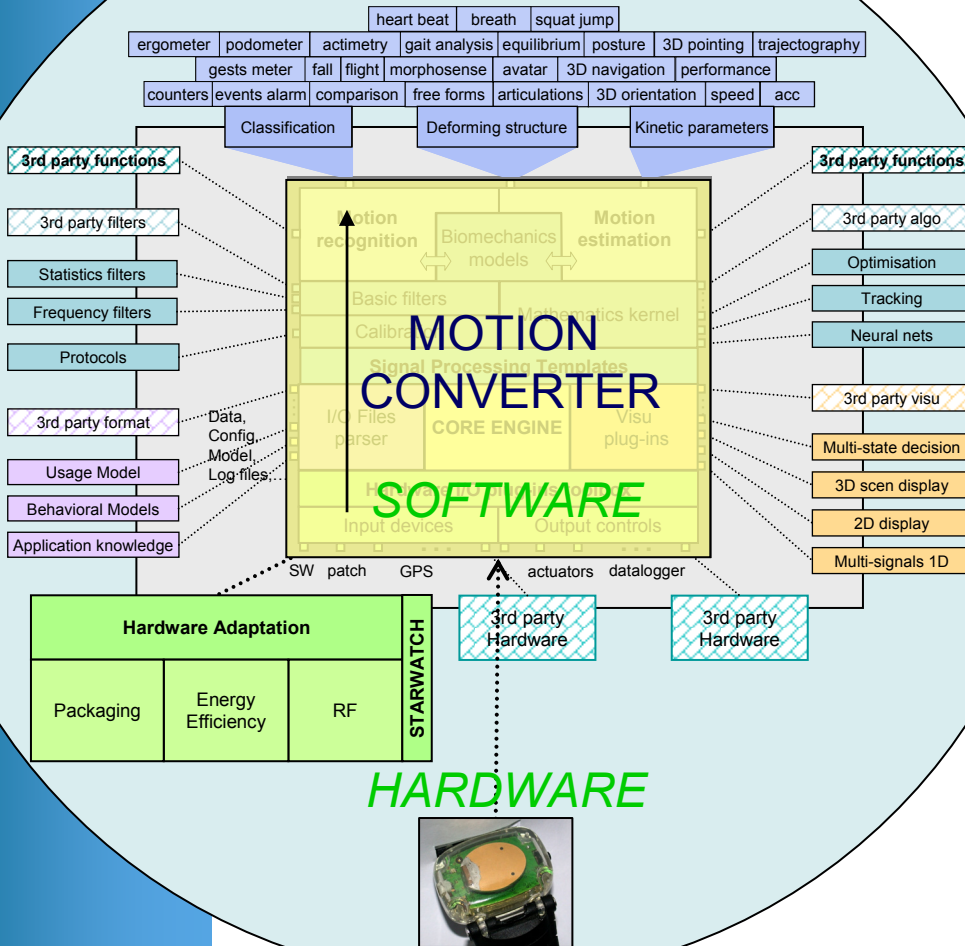
MOTION FUNCTIONS



OEM customers develop their own application with the "MOTION DEVELOPMENT KIT"

Some examples...

MOTION FUNCTIONS

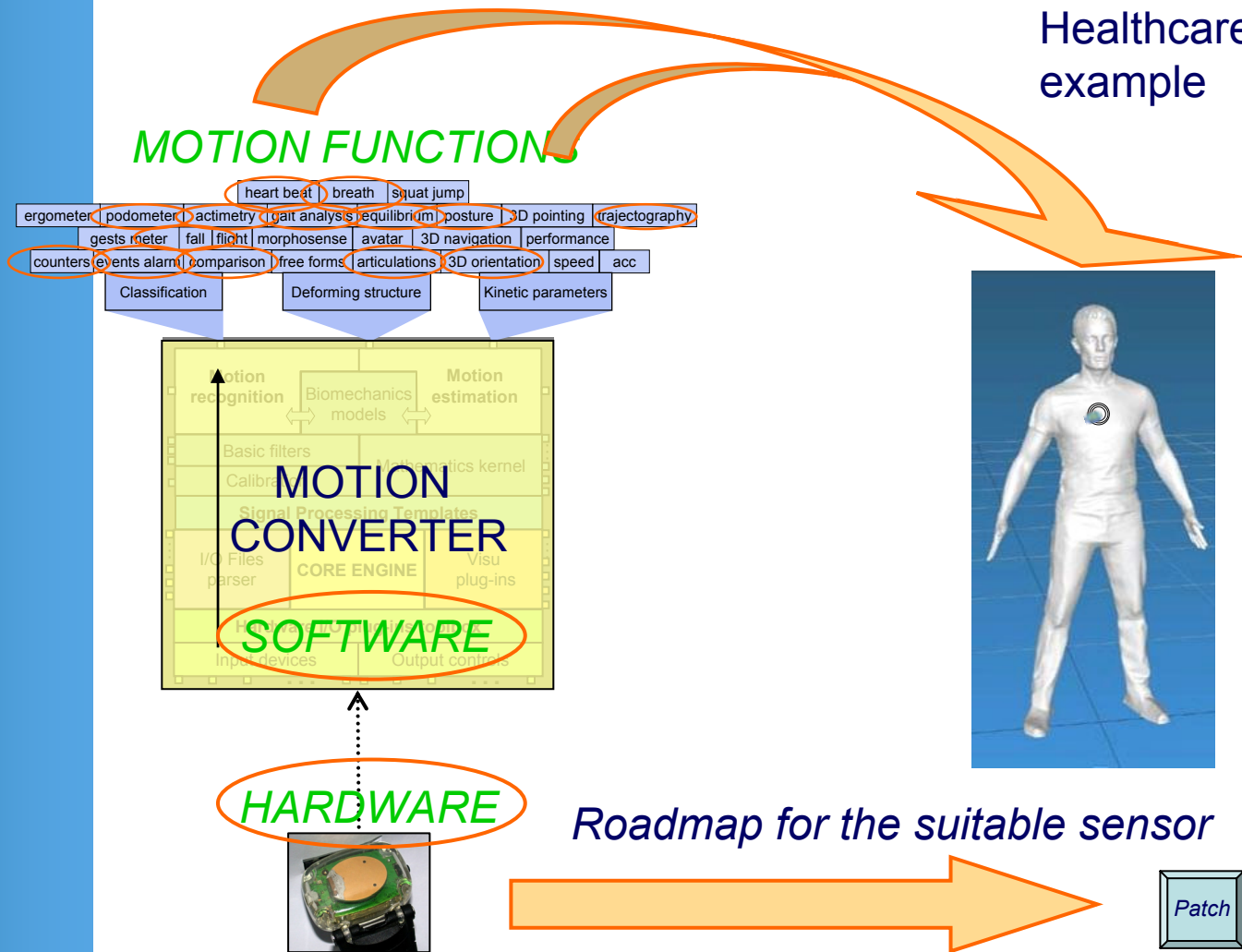


OEM customers develop their own application with the "MOTION DEVELOPMENT KIT"



Some examples...

Healthcare or sports example



Roadmap for the suitable sensor



Some examples...

Handset example
Software-only product

