

## Technology Offer

### Complete smart bus stop stand solution

#### Summary

*Spanish company has developed a complete smart solution for bus stops that provides additional services to bus passengers. It displays information such as location of the bus on an interactive map, weather forecast, advertising, etc. and provides the city council a platform to inform citizens about emergencies or other important matters. The company is looking for commercial agreements with technical assistance.*

<b>Creation Date</b>	15 October 2015
<b>Last Update</b>	18 May 2017
<b>Expiration Date</b>	13 October 2017
<b>Reference</b>	TOES20151015001

#### Details

##### Description

Current solutions displayed in bus stops around the world incorporate embedded systems that are mainly LED panel-displays. It allow showing only text information such as route number, expected arrival time, time, etc.

In order to improve the services offered to bus passengers and citizens by the city council, the Spanish company has developed a complete solution with an interactive screen, that provides the following services apart from the route number or expected arrival time:

- Location of the bus on the interactive map.
- Displays the status of vehicles (waiting time, delays, traffic map, etc.)
- Money exchange rate.
- Weather information , running text with news, etc.
- Social and commercial advertising video.
- Information about emergencies (warning systems, map of evacuation, etc.)
- Video surveillance

This solution combines the following elements:

- GPS software for bus tracking: Provides real-time location of vehicles. Each vehicle automatically determines its location once every second using GPS, odometer and route matching. This information is sent to a central processor using digital wireless communications.
- Servers for information storage.
- HD Displays with a PC mounted on metal totems for the bus stops that are waterproof, dustproof, antivandalic and feature temperature control.
- Website and mobile app to improve the passengers experience.
- System monitoring software: Provides information to the administrator about the system.
- Advertising control & broadcast module: Digital signage systems deliver customized media playlists to one or more digital screens, enabling the network manager to display any information.

This system addresses for cities over 350.000 citizens.

The company is looking for partners integrating mobility solutions for city councils in need of an innovative solution for bus stops under commercial agreement with technical assistance.

## Advantages and Innovations

-Existing LED panel-displays, installed in bus stops, allow showing only text information such as route number, expected arrival time, time, etc. On the other hand, this solution incorporates an interactive display that provides useful information to citizens and tourists such as emergency situations, weather forecast, news, etc. It also can be used to display promotional materials and social advertising videos for the financing of the system maintenance and deployment.

-The system provides different useful statistics with charts to the administrator regarding fuel consumption, routes, driver control, delays, etc.

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

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## Keywords

### Technology

01004002	Applications for Tourism
01004003	Applications for Transport and Logistics
01006001	Audiovisual Equipment and Communication
01006008	Satellite Technology/Positioning/Communication in GPS

### Market

01004001	Local area networks
09001007	Other transportation

### NACE

J	Information and communication
J.61.9.0	Other telecommunications activities

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## Network Contact

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**Issuing Partner**

ASTER - SOCIETA CONSORTILE PER AZIONI

**Contact Person**

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**Open for EOI :** **Yes**

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**Dissemination****Send to Sector Group**

ICT Industry and Services

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**Client****Type and Size of Organisation Behind the Profile**

Industry SME 11-49

**Year Established**

0

**Already Engaged in Trans-National Cooperation**

Yes

**Languages Spoken**

English  
Spanish

**Client Country**

Spain

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**Partner Sought****Type and Role of Partner Sought**

The company is looking for partners integrating mobility solutions for city councils willing to adapt it to specific cities' needs.

Ref: TOES20151015001

The kind of partnership sought is commercial agreement with technical assistance.

## Type of Partnership Considered

Commercial agreement with technical assistance

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## Attachments

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foto 2.jpg



foto 1 TO.jpg



## Technology Offer

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# New motion capture modular suit for analysing human kinematic movement information in real time in the areas of sports, health and entertainment

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## Summary

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*A Portuguese engineering SME that develops robotic solutions and wearable technology is offering a motion capture (MoCap) modular suit. Designed to acquire the human body movement without any cameras, markers or infrastructure, it enables its user to analyse the human kinematic information in real time. The company is looking for a commercial agreement with technical assistance, a joint venture and/or a manufacturing agreement with entities in the fields of sports, health and entertainment.*

<b>Creation Date</b>	02 June 2016
<b>Last Update</b>	04 October 2016
<b>Expiration Date</b>	04 October 2017
<b>Reference</b>	TOPT20160318002

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## Details

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### Description

A Portuguese engineering SME has developed a new a motion capture (MoCap) modular suit which enables the acquisition and analysis of human kinematic information in real time, regardless of gender and/or morphological properties. As any other wearable MoCap, it is designed to acquire the human body movement without any cameras, markers or infrastructure. By taking advantage of its 17 inertial sensors (IMU) and 11 ZigBee communication modules, the suit allows its users to obtain the total kinematic configuration of the human body at 100 hertz (Hz), namely, the angular position, velocity and acceleration of the human body essential joints. Given its features, this MoCap suit can be used in sports (e.g., learning, training and competition), health (e.g., ergonomics and rehabilitation) and entertainment (e.g., videogames and movies).

The company's philosophy is to produce and commercialize new products and know-how in line with the state-of-the-art, promoting the cooperation between public institutions and private technological entities, adopting both concepts of market-pull and technology-push. The company has been developing internet-connected solutions, where users interact with smart devices, such as robots or wearable solutions, through browser-based applications developed using both Hypertext Markup Language, version 5 (HTML5) and Web Graphics Library (WebGL) technologies. These applications are hosted within a Cloud platform - a scalable cloud-based architecture for efficient information sharing between the users, the smart devices and the browser-based applications.

The company is looking to establish a commercial agreement with technical assistance (e.g. assembly, engineering, technical consultancy), a joint venture and/or a manufacturing

agreement with partners in the areas of sports (e.g., learning, training and competition), health (e.g., ergonomics and rehabilitation) and entertainment (e.g., videogames and movies) related to human movement analysis or reproduction that may require human movement analysis.

## Advantages and Innovations

As any other wearable motion capture (MoCap) modular suit, it is designed to acquire the human body movement without any cameras, markers or infrastructure. However, given its features, it allows its users to obtain the total kinematic configuration of the human body, namely the angular position, velocity and acceleration of the human body essential joints in 3D, real time and virtually anywhere. In order to do that, the MoCap suit has:

A high range of data acquisition:

- 100 Hz of output rate from 17 inertial trackers (full body)
- 10 Hz for real time live view with 2 second delay over the internet

A user-Friendly Software:

- Online application that can run on any device with internet connection

A Plug'n Play Hardware

- Single MODE button with two modes depending on pressing time: start acquisition or calibrate;
- One-step setup

A pervasive motion capture (MoCap)

- Autonomy up to 4 hours, with recharge time up to 2 hours via inductive charging (wall charger included)
- Modular nature that can work under different configurations
- Water-resistant body suit built on Polyamide, Polylactic Acid (PLA) and TPE (thermoplastic elastomer) filament, a flexible 3D printing material

The combination of this specific features make the MoCap suitable for sports (e.g., learning, training and competition), health (e.g., ergonomics and rehabilitation) and entertainment (e.g., videogames and movies) purposes, while increasing the freedom of movement of the subject and reducing the preparation time and lower on-body weight of the system.

## Stage of Development

Already on the market

## IPR Status

Other

## Comment Regarding IPR status

The company published some scientific articles on the motion capture modular suit developed.

The suit has not been patented.

## Profile Origin

Private (in-house) research

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## Keywords

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## Technology

01001001

Automation, Robotics Control Systems

Ref: TOPT20160318002

01002001                      Micro and Nanotechnology related to Electronics and Microelectronics  
01002004                      Embedded Systems and Real Time Systems  
01003008                      Data Processing / Data Interchange, Middleware  
09003                              Electronic measurement systems

## Market

02006004                      Data processing, analysis and input services  
02006007                      Databases and on-line information services  
02007007                      Applications software  
02007012                      Medical/health software

## NACE

P.85.6.0                        Educational support activities  
Q.86.9.0                        Other human health activities  
R.93.1.9                        Other sports activities

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## Network Contact

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### Issuing Partner

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### Contact Person

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**Open for EOI :**    **Yes**

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## Dissemination

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### Send to Sector Group

ICT Industry and Services



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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME <= 10

### Year Established

0

### Already Engaged in Trans-National Cooperation

No.

### Languages Spoken

English

Portuguese

### Client Country

Portugal

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## Partner Sought

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### Type and Role of Partner Sought

The company is looking for partners such as R&D institutions, industries and businesses working in the fields of sports (e.g., learning, training and competition), health (e.g., ergonomics and rehabilitation) and entertainment (e.g., videogames and movies) related to human movement analysis or reproduction that may require human movement analysis.

Potential partners must be interested in acquiring and commercialising the motion capture modular suit through the establishment of a commercial agreement with technical assistance (by providing assembly, engineering and technical consultancy), a joint venture and/or a manufacturing agreement.

Potential partners may need to perform tasks that require human movement analysis.

### Type of Partnership Considered

Manufacturing agreement

Commercial agreement with technical assistance

Joint venture agreement

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## Attachments

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## Technology Offer

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# Licensee sought for a machine producing special 3D textiles

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## Summary

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*A Czech university has developed a machine that produces 3D nonwovens with various sizes of layers; from thin (0,5-2 mm) to thick (7-15 mm). Additional layers (nanowires, papers, plastics, metal foils, etc.) can be added simultaneously. End products include namely filters but can be adapted also for insulations or sorbents. The university is looking for partners interested in further development based on technical cooperation and for companies interested in production under a license agreement.*

<b>Creation Date</b>	23 August 2017
<b>Last Update</b>	05 September 2017
<b>Expiration Date</b>	05 September 2018
<b>Reference</b>	TOCZ20170728001

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## Details

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### Description

A machine developed by the researchers from the Czech university is intended mainly for manufacturing of specialized multilayer - folded 3D fabrics. Such fabrics might be used for producing filters especially for filtering gases and liquids. The unique machine enables production of special products to filter air, water and oil and is in comparison with competitive technologies characterized by higher absorption and therefore higher efficiency. Multiple filter layers also enable control and setting of the filtration process.

In comparison with machines produced by the competitors, the design of the machine allows to insert several different materials such as textile, paper, film (including nanolayers), which leads to gradual layers' fixation and creation of 3D structure made of these materials. The manufacturing process also allows to add layers containing various powders, including nanopowders.

Products can be manufactured from two or more layers in a single process step. The inner layer may be e.g. plastic foil, aluminium foil, layer of nanofibres etc. In addition, it is possible to reinforce the surface of the product, again, in a single process step.

Principle of technology lies in the vertical stacking of the incoming semi-product (nonwoven textile) and subsequent fixation of the structure. Fixation of the structure is mechanical with possibility to be combined with heat.

As an incoming semi-product (nonwoven textile) can be used, e.g., heat-bonded nonwoven fabrics, needle punched nonwovens (classic and water-jet), weaving nonwovens (containing fleece), spun-bond with a low degree of calendaring.

Technical applications of the output products are in the areas of acoustic insulation in the automotive, filtration media and special filters, absorbent cores, seals, vibration control, carpet pads, gaskets etc.

The university offers a licence for manufacturing the machine based on the licensing agreement as the university is not a manufacturer. The university is also looking for partners interested in further development of the machine in order to develop applications in nanofiber, filtration and/or sorbents (application prevent bio-contamination etc.) based on technical cooperation agreement.

## Advantages and Innovations

Innovations:

The novelty of the machine and its key advantage is in the creation of 3D-folded product, which is suitable for further processing into filters with enhanced capacity and durability. Such principle is not yet used by the competitors and is characterized by higher production efficiency and low operating costs. Some types of filters have been already tested in accredited laboratories but the composition of the filter (various filter layers) needs to be adapted for to specific filtration requirements according to the results of other tests.

The end product from the machine can be a filter having favourable value between volume and sorption surface mainly due to the 3D-fabric characteristics such as higher capture efficiency of particles, less fouling and hence longer service - life. Additionally, the machine can be set up in a way that the filter can be composed of different layers, thus the filter may have different parameters for different types of filtration.

Advantages:

- Small build-up floor space
- Production speed is up to 10 m / min
- Product thickness: 4 -7 mm
- Product weight: 300 to 800 g/m<sup>2</sup>

## Stage of Development

Prototype available for demonstration

## Comments Regarding Stage of Development

Prototype available in the university laboratory.

## IPR Status

Patents granted

## Comment Regarding IPR status

Two European patents granted and other two patents granted in the Czech Republic.

## Profile Origin

National or Regional R&D programme

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## Keywords

### Technology

02007018

Advanced Textile Materials

03005005

Non weaving related to Textiles Technology

10001001 Acoustic safety  
10002002 Outdoor Air Pollution/Treatment

## Market

08003005 Other industrial machinery for textile, paper & other industries  
08004001 Air filters and air purification and monitoring equipment  
09004003 Textiles (synthetic and natural)

## NACE

C.13.1 Preparation and spinning of textile fibres  
C.13.3 Finishing of textiles  
C.13.9.5 Manufacture of non-wovens and articles made from non-wovens, except apparel

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## Network Contact

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### Issuing Partner

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**Open for EOI :**    **Yes**

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## Client

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### Type and Size of Organisation Behind the Profile

University

### Year Established

1953

### Turnover

Ref: TOCZ20170728001

10 - 20M

## Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English  
Slovak  
Czech

### Client Country

Czech Republic

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## Partner Sought

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### Type and Role of Partner Sought

Type of partner sought: industry

Specific area of activity of the partner:

Manufacturer of air filtration, manufacturer of soundproofing, manufacturer of textile machines

Task to be performed by the partner sought:

In the case of licensing agreement:

Acquiring a licence for manufacturing the machine

In the case of technical cooperation agreement:

Joint further development and adaptation of the machine for applications in nanofiber, filtration and/or sorbents (application prevent bio-contamination etc.).

### Type and Size of Partner Sought

SME 11-50,>500 MNE,251-500,SME 51-250,>500

### Type of Partnership Considered

License agreement  
Technical cooperation agreement

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## Attachments

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