

Partnering Opportunity

Profile Status: Published

Technology Request

A Belgian company specialised in medical devices looks for partner to develop a personal defibrillator

Summary

The Belgian SME is active since 20 years in the field of equipment for security at work and medical devices distribution, in particular by distributing automated external defibrillators (AED) for years. In association with an experimented anesthesiologist-emergency physician, the company has developed a concept of personal portable device. It is now looking for partner under research cooperation agreement, to develop the prototype and potentially get the product ready for commercialisation.

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Reference TRBE20190114001

Details

Description

A Belgian SME specialised in the security and safety at work fields is active in the distribution of security equipment (extinguishers, sprinklers, respiratory protection...) and medical devices in particular automated external defibrillators (AED). Together with its activities in fire training, the company has acquired a strong reputation in the field in Belgium and beyond borders.

Through this medical devices sector, the company has been providing equipment to a major hospital in its region, and thus developed close contacts with an anesthesiologist-emergency physician working as head of the hospital emergency service.

The experience of the anesthesiologist-emergency physician has shown that, outside the hospital, cardiac arrests are one of the main causes of death. In average, this represents 300.000 deaths per year in the USA, 400.000 deaths per year in Europe.

More than half of these deaths occur through defibrillable / shockable cardiac arrhythmia. In spite of the continuous increase in the number of automated external defibrillators (AED) as well as basic resuscitation training of the population, the rate of mortality remains high. In particular,

Ref: TRBE20190114001

many patients who are known to be at risk (angina, myocardial infarction) are seldom able to afford the luxury of having an AED (Automatic External defibrillator) at home. Less than 1% of public AEDs are put to use, since it happens too often that they cannot be accessed fast enough from the place where the victim is located.

The Belgian SME, in collaboration with the anesthesiologist-emergency physician, has therefore developed and protected a concept, based on the assumption that the possibility of immediately using an AED in the event of highly-suspicious symptoms - among others, chest pains - would invariably have a positive impact.

Without any intervention by a third party, a person with coronary-artery disease experiencing precordial pain, could, straight away, place an AED on the skin of his/her chest just before phoning emergency services to state where he/she is and what the problem is.

Even if he/she loses consciousness after application of the personal AED, the patient would benefit from an automatic analysis by the AED, every 2 minutes, with a subsequent electric shock for every positive analysis (it is impossible to deliver a shock outside of this positive analysis). The device is fully-automatic, so there is no need to press the SHOCK button should the analysis detect a defibrillable rhythm.

The probability of survival will be clearly increased. Even without external chest compressions, it is known that early defibrillation, on its own, can be a life-saver. This in no way prevents another person on-site from intervening (by calling emergency assistance, giving access to the premises and carrying out a cardiac massage if the victim loses consciousness and is not breathing), and of course, using the personal AED exactly as they would with another AED.

The commercial prospects for such a product are very important and promising. In order to propose this personal AED on the market, the Belgian company is now looking for partner willing to collaborate under a research cooperation agreement. The role of the partner should be to help to develop the prototype and potentially to manufacture the product.

Technical Specification or Expertise Sought

Technical expertise in battery, electrode and in the field of electronics is sought for an optimal miniaturization of the capacitor in particular.

Technical specification of the future device:

- Easy to carry everywhere: shape and size make it possible to slip the personal AED in a pocket or handbag, like a smartphone.
- Affordable price for the general public
- Single use
- Battery included, should suffice for c.a. 15 shocks.
- Electrodes are easily removable and are self-adhesive. Once removed from the device, the electrodes are affixed to the right parts of the body (right shoulder, left flank) and put the system in operation.
- Mode of operation : fully-automatic mode, analysis starts as soon as turned on, automatic shock is delivered whenever necessary, reanalysis carried on every two minutes and, when needed, another shock is delivered.
- Casing would be sufficiently sturdy to resist the direct compression of a cardiac massage, seeing that this personal AED would be placed on the lower half of the sternum (usual point of compression).

Stage of Development

Concept stage

IPR Status

Patents granted

Network Contact

Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

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Open for EOI : **Yes**

Dissemination

Relevant Sector Groups

Healthcare

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

1999

Turnover

1 - 10M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English

French

Client Country

Belgium

Partner Sought

Type and Role of Partner Sought

A partner is needed under a research cooperation agreement in order to develop the prototype for the concept and, potentially to manufacture the product in order to commercialise it on the market.

Expertise in electronics is an important asset, since an optimal miniaturisation of the capacitor is needed to reach the defined objectives.

The partner could be an enterprise- for example enterprise manufacturing AED, a research center or a university.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Research cooperation agreement