



PRESS RELEASE

Brussels, 17 June 2013

NEW DEVICE VIGI'FALL WILL MAKE GROWING OLDER SAFER THANKS TO EU FUNDING

Unique Vigi'Fall fall detection solution could help save 500,000 hospitalisations and 40,000¹ premature deaths caused by falls in Europe every year

Solution expected to create 100 qualified jobs and to be used by 3 million elderly in Europe over the next 3 years

The FallWatch Consortium brings together a wealth of European technology and expertise in a tiny triangular patch called Vigi'Fall that can be worn by the user in a non-intrusive, permanent manner. The interaction between the device worn by the user, the infrared motion sensors mounted throughout the living area and a central control box ensures the accurate detection of a serious fall and the timely intervention of an emergency medical team. The next phase of the project, FallWatch DEMO, aims to optimise functionality and accuracy even further by incorporating heartbeat monitoring. The FallWatch/FallWatch DEMO projects have received combined funding of almost €2 million from the European Commission. The consortium is led by French start-up Vigilio S.A. and is a good example of how information / communication technologies (ICT) can make life easier and better for the elderly.

"It is estimated that over 20 million people aged 65+ suffer a fall every year in Europe. It is the leading cause of trauma-related deaths in this age group. Immediate medical intervention is therefore crucial and can often mean the difference between life and death," explains Jean-Eric Lundy, founder of Vigilio S.A and a doctor at the emergency department of the Cochin Hospital in Paris. "Far too often we see elderly patients arrive at the emergency department after lying on the floor for hours unable to call for help. The physical and psychological deterioration that ensues is often irreparable. The ability to intervene quickly and provide the medical assistance required can ensure that a fall does not have a permanent impact on the person's quality of life."

How the Vigi'Fall solution works

The solution is based on a sensor system. A biosensor is worn by the user while a number of other sensors are wirelessly attached to walls around the home, much like domestic burglar alarm sensors. If the user suffers a fall, in addition to the fall signal emitted by the biosensor, the wall-mounted sensors detect the absence of movement and wirelessly relay a signal to a central control box, also located within the home. The control box connects automatically, via telephone, to a nurse or to a call centre if the fall occurs in the user's own home. In order to distinguish between real falls and false alarms, the device is equipped with data-fusion software which allows it to analyse the nature of the fall (with or without impact) and the resulting posture of the patient. In a nursing home, a nurse intervenes immediately.

¹ European Network for Safety Among Elderly (EUNESE) : <http://www.injuryobservatory.net/wp-content/uploads/2012/08/Older-Guide-Prevention-of-Falls.pdf>

As a second line of verification for people living alone, an operator at the call centre attempts to contact the user by telephone. If the phone call goes unanswered, the family or an emergency rescue team is immediately mobilised.

The key challenges for the FallWatch Consortium were to miniaturise the system and to make it easily and comfortably wearable. For this reason, the consortium drew together European partners with a broad range of highly specialised skills ranging from personal security, microelectronics and biomaterials to nanotechnology, medical adhesives and high performance military and aerospace batteries.

Wearable even in the shower and charged by high-powered batteries, the patch – once in place on the skin – can simply be forgotten about, with the user secure in the knowledge that, should a fall occur, help will be instantly on its way.

Successful clinical trials and commercial roll-out

The miniaturised Vigi'Fall patch has been successfully trialled in laboratory, hospital, nursing home and domestic environments. Lab trials demonstrated a 90%+ successful detection rate for the biosensor alone without use of the data-fusion software. Trials in real-world environments, which incorporated the data-fusion software, showed an even higher success rate with false alerts practically eliminated.

"We have been involved in trials of the Vigi'Fall solution from the outset and have seen it constantly evolve in terms of performance to a point where false positive and false negative alerts are rare" says Pr. Anne-Sophie Rigaud, head of the gerontology service at Broca Hospital, Paris. "User-comfort has also been an important consideration and the current miniaturised patch is non-intrusive, both from a physical and psychological point of view. Our patients tolerate it well."

Created in collaboration with Pr. Norbert Noury (INL Lyon), the Vigi'Fall solution came on the market in November 2012. The various components of the solution are manufactured in France, Italy, Germany and UK and then assembled in France. Contracts have already been signed with establishments in France, Portugal, Kuwait and with the international healthcare group Europ Assistance, a partner in the FallWatch Consortium. Other contracts are currently being negotiated with Switzerland, Denmark, Ireland and Lithuania. The home version of the solution will be available in the last quarter of 2013 while the second generation of the device, which will also be adapted to US RF standards, will enter into clinical trials in the US and Europe in September 2013. A commercial version of this new solution is expected to be ready for market at the end of 2014 opening up important new business opportunities. In addition to Europe and the US, several countries in Asia have expressed interest in adopting this unique technology. It is estimated that 100 qualified jobs will be created in the countries participating in the FallWatch projects in the course of the next 3 years.

Finally, the ability of the second generation device to monitor the wearer's heartbeat may also lead to new telemedical applications, in particular for cardiac patients and epilepsy sufferers that do not respond to pharmacological treatment.

"The FallWatch project is a perfect example of the great healthcare advances that can be achieved when the best and brightest of European industry work together", comments Michael Jennings, European Commission spokesman responsible for research, science, and innovation. "This is the type of innovation that makes a difference in people's lives while also contributing to European competitiveness, which the Commission will continue to support under the future EU Research and Innovation Programme Horizon 2020."

To see the Vigi'Fall solution in action, go to:

<http://www.youtube.com/watch?v=GsFhILZ1jmA>

To follow the project on Twitter: #Fallwatch

FallWatch is just one of many healthcare projects receiving support through European Union R&D programmes.

For the latest information on European research and innovation, go to:

<http://www.facebook.com/innovation.union>

<http://twitter.com/innovationunion>

About the FALLWATCH/FALLWATCH DEMO Consortium

The FALLWATCH Consortium led by Vigilio S.A is comprised of leading industrial and academic partners: **Plastod (IT)** which produces plasters and adhesive dressings, **BSE (FR)**, a specialist in electronic subcontracting, **Stattice (FR)** a company that develops and manufactures medical components, **PMBL (UK)**, a rechargeable battery manufacturer, **Inspiralia (ES)**, specialised in RF transmissions, **University Joseph Fourier (FR)** recognised for its work in the area of health parameters, **QinetiQ (UK)**, a leading international defense and security technology company, **NanoCAT (IT)**, a nanomaterials engineering firm, the **LCPO (FR)**, a lab that does cutting edge research on adhesives and polymers, **Europ Assistance (FR)**, a leading European assistance provider and **AEMtec (DE)**, a company specialised in complex electronic microsystems.

About European research and innovation funding

In 2014 the European Union will launch a new, seven year research and innovation funding programme called Horizon 2020. Since 2007 the EU has already invested nearly €50 billion in research and innovation projects to support Europe's economic competitiveness and extend the frontiers of human knowledge. The EU research budget represents around 12 percent of total public spending on research by the EU's 27 member states and is focused mainly in areas like health, the environment, transport, food and energy. Research partnerships with the pharmaceutical, aerospace, car and electronics industries have also been formed to encourage private sector investment in support of future growth and high skill job creation. Horizon 2020 will have an even greater focus on turning excellent ideas into marketable products, processes and services.

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