The goal of the FET-Open Innovation Launchpad project SensAgain is to restore sensations from lost legs, for health and quality of life augmentation in amputees.

After successful completion of the FET-Open project NEBIAS [2], that managed to develop a groundbreaking technology enabling upper limb amputees to intuitively control and feel artificial prosthesis as they were natural parts of their body, the SensAgain project takes a further step forward.

Now, the aim is to verify whether the innovation generated during NEBIAS could be exploited to provide clinically effective devices for lower-limb amputees as well. The ambitious goal of the project is the introduction on the market of neuroprostheses with the lower limb peripheral nervous system.

The proposed solution relies on the scientific knowledge gathered during the implementation of the NEBIAS project. The new device will be composed of implantable transversal multi- and intra-fascicular neural electrodes, an implantable neurostimulator, an external controller and a sensorized sole.
The focus is on creating a concrete, close-to-market and high-potential innovation, with features reckoned as necessary by the patients. The impact of such a solution will undoubtedly be huge, from both the economic and societal points of view. Because of the lack of sensory feedback from the leg prosthesis, lower-limb amputees are not able to maintain the symmetry between their legs while walking and/or standing and, for this reason, after long-term use of the prostheses, they incur problems such as osteoarthritis, osteoporosis and back pain. Due to unnatural movements, they experience higher metabolic cost with consequent fatigue and, occasionally, heart failures. They continuously risk falling and consequently, they do not rely on the prosthesis, causing their abandonment. The introduction of the device on the market will therefore help in preventing the occurrence of these issues and increasing the confidence in prostheses, while also enabling to save money of the health system and insurances.

The SensAgain project aims at investigating the interest and eventual benefits of customers and stakeholders and identifying an established partner for manufacturing, in order to make the transition from research to market as fast and realistic as possible. The results of market exploration will be shared with the members of the NEBIAS consortium and related research groups to further stimulate the entrepreneurial mindset in the FET research world. After the preliminary steps, clinical trials and certification of the device are foreseen to pave the way for commercialisation of this revolutionary solution.

The project is led by SensArs Neuroprosthetics (Switzerland), a world-pioneering company delivering unique solutions within neuroprosthetic technologies.

**Project:**
Restoring of SENSAtions from Lost LeGs for health And qualitv of life augmeNtation in amputees

**Project coordinator:**
SENSARS NEUROPROSTHETICS SARL, Switzerland

**Project Acronym:**
SensAgain

**Project website:**
https://cordis.europa.eu/project/rcn/209088_en.html

**Source URL:**

**Links**