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A neurotech startup born out of an EU-funded project

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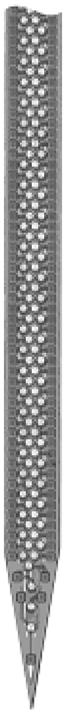

This is the fascinating story of ATLAS Neuroengineering [1]: a brilliant idea that set off 7 years ago and, last year, became a spin-off of imec, Leuven and IMTEK (a department of the University of Freiburg).

It all started as the NeuroProbes Integrated Project [2], an EU-funded project that tried to make a new type of device to measure brain activity. There already exist many diagnostic tools (e.g. MRI scans); however, these cannot tell us how individual brain cells (neurons) communicate with each other. Basically you can compare it when standing in front of a big group of people who are all talking at the same time, they generate a lot of noise but you cannot hear what the individual persons are saying. So, in practice, we already know which sub group of neurons is responsible for our ability to move our hands, to grasp objects, to see. What other tools don't tell us is what exactly happens in that area of the brain, how different neurons interact with each other so that we can grasp that bottle and have a sip. To find that out, we had to dive into the brain; and to do this, we inserted electrodes in the brain and had a close look at how our brain is organised at cellular level.

It all went very well, thanks also to the enthusiastic feedback from users. It was obvious we could not stop there. What also helped us take the leap to market exploitation was that one of the project requirements was that we actually plan the dissemination its results. That's how ATLAS Neuroengineering [1]was born.

For the past year, ATLAS Neuroengineering is fabricating implantable devices that can monitor brain activity. The implantable device can record individual brain cells (neurons). Neuroscientists use those implantable devices to get a better understanding of how the human brain works and how to treat brain-related diseases such as epilepsy, Alzheimer's, depression, Parkinson's etc. This device looks like a needle. It is covered with hundreds of sensors (electrodes) and is almost as thin as a human hair (see figure).

The implantable device can record simultaneously from different brain areas without mechanically repositioning the electrodes. The electrode configuration can be easily changed during the experiment by simple mouse clicks on the computer. The main advantage is that this results in shorter surgery times and less tissue-reaction.

In its first year of activities, ATLAS Neuroengineering has already generated sales and filled a patent application. The company has customers from various research institutes, universities and hospitals located all over Europe and is starting to attract new customers in the US and Canada. And we are not alone in this. We work closely with NERF [3] (an institute for cognitive neuroscience and physiology, where we developed a spectacular 4 cm tall flexible silicon probe that got us a patent provisional). We are also working with seniors and experts in the field such as Cowin [4] (who supports us in international trade, intellectual property, standardization procedures, and bring us in contact with the right public and private investors to support the growth of the company).

I consider ATLAS as a concrete example of how EU-funded research projects' results can find their way to the market. Our ambition is to become the leading company supporting the evolution of neurosciences. Our tools and solutions create new roads and maps for scientific neurophysiologists and neurosurgeons to generate new therapies and approaches and cure brain diseases.

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[1] http://www.atlasneuro.com/
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