

Sioux leads I-MECH

# 'THE BAR IS SET VERY HIGH'

The I-MECH consortium is developing a revolutionary, broadly deployable platform for mechatronic systems that distinguishes itself with its control technology. Using this platform, multidisciplinary development processes can be sped up by half, and intelligent machines with a high degree of reliability can be manufactured. The consortium is being supported by the European Union and managed by Sioux. **Arend-Jan Beltman**, programme manager at Sioux, says the following: 'What started out as loose grains of sand is now becoming a true team.'



◀ Arend-Jan Beltman and Yves Gigase (left to right)



Horizon 2020, the current European programme for stimulating innovation, represented a departure from old methodologies for the European Commission. Investments in scientific research were resulting in too few innovations that actually ended up in the market. At the same time, against a background of economic globalisation and the rapid emergence of new technologies, the importance of stimulating the transition to industry 4.0 was increasing. As such, the European Union chose to implement an approach that revolves around collaboration between the corporate world, knowledge institutes, and governments. ECSEL Joint Undertaking is one of the organisations putting this concept into practice.

### Digital economy

‘Our stakeholders are the European industry associates, the European member states, and the European Commission’, says Yves Gigase, head of programme with ECSEL Joint Undertaking. ‘This is what makes us unique here in Brussels. We are contributing to innovating the industrial sector, both large and small-scale enterprises. That way, we are securing and strengthening their competitive position. Our focus in this is on electrical components and systems. Our guiding principle is the notion that investing in R&D and innovative projects – and leadership in this key enabling technology – is essential for Europe’s future prosperity and wellbeing. After all, we have entered a period of acceleration, such as in the fields of smart manufacturing, big data, and the Internet of Things. If you are not part of the global vanguard when it comes to these things, you are missing out on major opportunities.’

### Reference model

ECSEL JU launches calls for research and development projects each year. In 2016, Sioux responded with a project proposal geared towards creating a bridge between current knowledge on and the practical application of intelligent motion control for mechatronic systems. This project was kicked off in 2017. The consortium partners are spending 17 million euros on it in total. Of those 17 million euros, roughly 25% is subsidised by the EU. In addition,

‘This project will have a major impact’

some of the parties are receiving a supplement at national level.

Beltman: ‘The Intelligent Motion Control Platform for Smart Mechatronic Systems, or I-MECH, is a consortium of high-tech companies and knowledge institutes, featuring 31 partners from ten European countries in total. The consortium is working towards developing various building blocks, both software and hardware, with standardised interfaces, thus creating a full reference model for a motion control platform. This will enable faster realisation of smarter and better modules and machines. For example, we are working on a method for model-based designs and are introducing algorithms that are able to translate information from the ‘instrumentation layer’ into the system’s condition.’

### Level of ambition

For Yves Gigase, I-MECH is one of the most special projects he is managing as part of ECSEL JU, and not just because of its size. ‘It will have a real impact, both on the developmental abilities of the participants and in terms of its spin-off to other parties. As such, the bar is set very high. This is the kind of project that you could not achieve on your own, but can really be taken to the next level collectively. And even if only eighty or ninety percent of our objectives are actually achieved, that would still result in massive added value, in part due to the expertise that is being generated and the experiences that are being shared. Sioux too will profit from this. And this time around, it will not be within the comfort zone of the high-tech chain in Eindhoven, but – in line with their ambitions – in an international context.’

### Operational stage

Beltman has now been managing I-MECH for eleven months. Those months have mostly been about setting up projects, not just in terms of fine-tuning the substance thereof, but also in terms of impressing the urgency of things on the participants.

‘What started out as loose grains of sand is now becoming a true team. That is a challenge in and of itself, with so many partners who not only have mutual interests, but their own agendas as well. Even so, things are starting to ramp up. We are creating technologies that will allow us to marry big data and machine learning. In addition to that, we are developing wireless sensors that perform fast, accurate data processing every second. We are also working on a fast control system for electric motors in production machines. Yet another building block is based on extremely quick visual inspection that involves the analysis of massive volume of real-time data. We are doing all of this as part of wide-ranging pilot projects that are focused on various things: accurate systems for producing solar cells, providing support for robots in minimally invasive procedures, speeding up the manufacturing of tea bags, and correcting vibrations in chippers. Eventually, all of this should lead to an open platform, utilising modular, standardised tools that can be called on as needed for the development of motion control systems. This way, we will realise faster development times and improve the quality level of equipment.’



**KEY FACTS** Start: 1-6-2017 | Duration: 36 months | Participating organisations: 31 | Number of countries: 10

**MORE INFO** [www.i-mech.eu](http://www.i-mech.eu)