

# Community Talk with: Martin Benedikt

... being part of a winning team

Martin Benedikt graduated with distinction from his doctoral studies in technical sciences at Graz University of Technology. In his thesis, “A coupling method for non-iterative co-simulation”, he developed a new method to compensate inevitable coupling errors in modular simulation of complete systems. Martin works at the VIRTUAL VEHICLE Research Centre in Graz and lectured at the Institute of Control and Automation Technology at Graz University of Technology.

Martin took a somewhat unorthodox route to arriving in his current innovation manager role. “I think you can say my educational background is a little bit special,” he says. “I followed a vocational training course to become an electrician before switching to study automation and mechatronics at college. All the new technology that was happening at the time fascinated me and inspired me to begin studies in Graz where I focused on mechatronics and autonomous systems. This led me to the field of co-simulation, the topic of my thesis. The fundamental research I did laid the basis for a commercial co-simulation tool that has been developed at the VIRTUAL VEHICLE Research Centre in Graz where I headed the co-simulation team for four years after completing my PhD. And it’s here where I am the innovation manager

for Efficient Development topics today. For me, to see the research I did getting into a product like Model.CONNECT from AVL, formerly known as ICOS, makes me quite proud.”

#### **From Model.CONNECT to ACOSAR**

Essentially, Model.CONNECT is an innovative co-simulation platform that allows the integration of a variety of engineering domains based upon novel coupling algorithms: it paves the way for cross-domain modelling, simulation and validation for innovations in vehicles and supports the user with a simple handling and the integration of various simulation tools from different domains. “Ultimately, this reduces both development time and cost,” Martin explains, “and significantly increases the chances of a First-Time-Right solution.”



Given this background, it is hardly surprising that Martin became involved in preparing, proposing and eventually leading a project for ITEA, ACOSAR (Advanced Co-simulation Open System Architecture). “Basically the aim of this project is to develop both a non-proprietary advanced co-simulation interface for RT-System integration and a corresponding integration methodology. We are in the final step to make a substantial contribution to international Distributed Co-simulation Protocol (DCP) standardisation within the Modelica Association. Our goal is to pursue a modular, considerably more flexible and shorter system development process for numerous industrial domains as well as establish new business models.”

#### **Give and take**

This is the first ITEA project that Martin has led and he has already gained valuable learning

from the experience. “It was the first time I had an opportunity to become familiar with the perspectives of various so-called competitors or the importance of technical and business value chains. To experience the process of how these competitors work together, trying to push the technology forward, has been really interesting. In the beginning it was my job to build the consortium, network, communicate to the national funding agencies and liaise between the national organisations and the ITEA Office, where I got a lot of guidance, especially on the meaning of ‘funding’. Yes, it’s great to get funding but in the end you have to give something back. You have to come up with results that make a difference and are of sustainable value. We have already made very good progress on delivering the intended result, which is to produce a freely available standard. The fact that we are well on the way to achieving this has a lot to do with the support we get from

the ITEA process and Office and the willingness of people to deliver results – special thanks to Martin Krammer at this point for working hard in the background. The interim reports and reviews in particular help us to stay on track and offer good moments to make any necessary adjustments. It’s a question of give and take ... on both sides.”

#### **Never change a winning team**

“I should point out,” Martin adds, “that in Austria it is very difficult to initiate an ITEA project. There’s almost no separate funding set aside for this. For our company, this was the first time we had tried to initiate such an ITEA project and we were successful in getting the project off the ground with a second national application trial and the strong support from industrial partners. And we’re very happy it did because the ITEA framework is one in which a lot of experienced and motivated people get together to help drive the project in the right direction in a very familial atmosphere. My first impression was that ITEA is a very professionally run programme, with clear guidelines and an informative website. And that impression hasn’t changed. Although I did notice that during the last Project Outline preparation day I attended, the number of project idea presentations had doubled compared to when I attend this event for the first time. So if that and the fact that we would be keen to participate in future projects are anything to go by, my advice would be to stick to the same strategy and not change a winning team!”

#### **Nice experience**

From a professional perspective, Martin feels he has gained a lot from going through the project proposal and preparation process. “I must say I appreciate all the guidance and assistance I got from my ITEA programme manager, and I’m sure the same goes for my consortium colleagues. In terms of funding, procedures, where to focus effort, and so on. This was really added value. And from a personal point of view, it was just a nice experience to be involved, to be part of the network. It’s all about the people in the end, and so the benefits of having contact with all the different industrial partners and others from the ITEA organisation just makes you feel good, also personally.”