

Impact Story

From Great Ideas to Global Recognition



June 2021

How joining an EU consortium spotlighted research



In flight, every gram of weight counts. Yet, commercial jets carry 2 separate cable networks to supply power and data, each adding tonnes of weight. Based on his research in power line communication (PLC), Ulrich Dersch, Professor at the Lucerne University of Applied Sciences and Arts (HSLU), knew he could adapt a jet's power system to carry communications data - thus, decreasing weight and CO₂ emissions.

Why not use the power supply to transmit communications data? That was the question physicist Ulrich Dersch turned his attention to in the 90s. By 2005, with a reputation for innovation in PLC for data networks, Dersch and his team were picked for several European projects to deploy PLC for aircraft applications.

“In those early EU aircraft projects, we showed that PLC can provide enough bandwidth to make large parts of data cabling obsolete,” he says. “We then developed a dedicated PLC technology (Power Line Data Bus; PLUS) with the ambition of making it an aircraft standard.”

Support from Euresearch

Dersch says Euresearch greatly helped his entry into these projects. “Euresearch has accompanied me in all my EU projects, with valuable advice in administrative and legal matters, and information about upcoming programmes. From an administrative point of view, EU projects are quite demanding, so the support from Euresearch is particularly valuable. Because of their experience, Euresearch experts

are familiar with the setup and quickly understand the issues.”

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In 2013, Dersch and his team joined the EU project “ASHLEY”, aiming to create a more competitive avionics system for the European aerospace industry. “As soon as you have a history in major EU projects, other powerful partners become interested,” explains Dersch. “Through ASHLEY, we proved that our PLC technology fulfils the most critical communication requirements in the most critical environment – the passenger aircraft. This provided us with the best reference to explore further applications in trains, the automotive industry, etc.”

A great reference

How has the experience affected Dersch and his university? “The European partners who didn’t know us at the beginning, all knew us very well by the end,” he says. It has also brought Dersch’s work global exposure beyond Europe: in 2017, his team, with partner Diehl Aerospace, won the Crystal Cabin Award, the only international award for excellence in aircraft cabin innovation. Dersch believes his heightened profile with major companies across Europe has helped make his Competence Center Intelligent Sensors and Networks at HSLU even more attractive to young researchers.

Sarah Meyer de Stadelhofen for Euresearch

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(Ulrich Dersch)



Prof. Ulrich Dersch

Euresearch is an information and advisory service on the European Research and Innovation Framework Programmes. It has offices in all the Swiss regions and a Network Office in Bern. Euresearch is a non-profit organisation funded by the Swiss State Secretariat for Education, Research and Innovation.

CAREER PATH

Ulrich Dersch earned a PhD in semiconductor physics and began his career in communication technologies in the ABB Research Center Dättwil. He then worked for Ascom for 17 years, in the end as CTO and Head of Development, building and leading the group that made numerous prize-winning technological breakthroughs in PLC. In 2008, he joined HSLU, where he founded the Competence Center Intelligent Sensors and Networks. In 2014, he founded plc-tec AG, a spinoff of HSLU. Dersch is currently part of the EU projects "MISSION" (Clean Sky Joint Undertaking) and "ADENEAS" (Horizon 2020).

FACTS & FIGURES

Name Ulrich Dersch

Current Position Professor and Head of Competence Center at Lucerne University of Applied Sciences and Arts (HSLU); Director of plc-tec AG, a spinoff of HSLU

Project/Grant Name ADENEAS - Advanced Data and Power Electrical Network Architectures and Systems / Societal Challenges - Smart, Green And Integrated Transport

Research Area Aircraft data communication

Budget €4 018 012

Project Dates 01.02.2021 – 31.01.2024 (3 years)

More information

<https://cordis.europa.eu/project/id/101006728>

