

European Research & Innovation Project Innovative climate-control system to extend range of electric vehicles and improve comfort

Interview with **Dr. Alois STEINER** Coordinator of OPTEMUS

Co-Team Leader Thermal Management & Mobile Air Conditioning at VIRTUAL VEHICLE Research Center, Austria

Can you please tell us a little bit about yourself?

I'm from the province of Salzburg in Austria. I've studied Mechanical Engineering and Economics at Graz University of Technology. Since 2010 I'm working at Virtual Vehicle Research Center, where I finished my PhD studies with focus on reversible heat pump systems for electric vehicles. I became Co-Team Leader of the group "Thermal Management & Mobile Air Conditioning" in 2013 and I am responsible for various research projects as well as engineering services.

What about OPTEMUS? Can you remind us the main objectives of the project?

OPTEMUS stands for OPTimised Energy Management and USe. It addresses the major barrier towards mass-adoption of EVs through the combination of new technological developments.

Our main objectives are to reduce energy consumption, for passenger comfort but also for traction and component cooling, and to increase energy harvesting during vehicle usage.

When EMH, as partner of XERIC, contacted you in August 2015 to initiate clustering activities, what convinced you to answer positively?

I was curious to see the approaches of similar projects with the same targets than we have and was already looking forward to the first cluster meeting!



Date of interview: April 2018 Publication: May 2018 - 1/2

Dr. Alois STEINER

is Co-Team Leader of the group Thermal Management & Mobile Air Conditioning at Virtual Vehicle Research Center. He is coordinating the OPTEMUS project, in which Virtual Vehicle is in charge of the simulation of the compact refrigeration unit integrated in the cooling and heating system in order to define the thermal management strategy.

"The tests of the XERIC Climate Control System in relevant environment and the gathered infomation about the functionality of the system are important achievements of the project."

After 3 years of parallel work, what do you remember the most from this cluster approach between XERIC, OPTEMUS and JOSPEL?

It was very interesting to see the work of the partners of the JOSPEL and XERIC projects e.g. at the cluster meeting in Bologna, to generate ideas for innovative solutions and to discuss challenges in the development of technologies.

XERIC's final meeting is now going to take place in Brussels in a few weeks. What are, for you, XERIC's main achievements?

The idea behind the XERIC system to separate cooling and dehumidification of air is interesting. The tests of this prototype in relevant environment and the gathered information about the functionality of the system are important achievements.

" XERIC and OPTEMUS learn from each other how comfort related systems and especially vapor compression cycles could be further improved."

From your perspective, what is the outlook for the climate control technology developed in the frame of XERIC?

The further necessary steps are in my opinion to evaluate how this system could be implemented in a demonstrator car (packaging, system control etc.). As OEMs usually have very strict space and cost restrictions, a discussion with them as well as with tier-one suppliers of HVAC systems (e.g. DEN-SO) should help to better understand how the XE-RIC technologies could be possibly implemented in a vehicle.

How do you link it with the technologies developed in the frame of OPTEMUS?

Basically the two projects can learn from each other how comfort related systems and especial-

ly vapor compression cycles could be further improved. It would be interesting to pursue clustering activities in order to see which project results could really be successfully transferred to products on the market.

OPTEMUS, JOSPEL and XERIC successfully applied to the European Commission's Common Dissemination Booster Service, which will start at the beginning of June. What are you expecting from that joint action in particular?

All three projects have developed promising technologies, which now need to be brought to OEMs/ into vehicles. Thus I expect the planning of specific dissemination activities that support the awareness at major customers and possible breakthrough of the developments.

Thanks for your time, and long live our collaboration!

VIRTUAL VEHICLE, partner of OPTEMUS

is an internationally operating research center that develops technologies for affordable, safe and environmentally friendly vehicles for road and rail. <u>http://www.v2c2.at/en/</u>

XERIC in brief

XERIC is a European Research & Innovation Project Start date: 1st June 2015 End date: 31st May 2018

Number of partners: 8

Coordinator: Dr. Eng. S. GAETA GVS spa - Italy

> Programme: H2020-GV-2014 Project Reference: 653605



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