



# NEWSLETTER 1/2011

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## Subsidy by the Federal Ministry of Education and Research Germany

### „Danube universities – Research at the knowledge river“



The University of Applied Sciences Ulm submitted an application for support in the competition „Implementation of marketing actions in the region Central, Eastern and Southeast Europe“ for R&D networks and research clusters in line with the initiative „Promotion for innovation centre Germany“ with two partner universities from Hungary: **Budapest University of Technology and Economics** and **Széchenyi István University of Győr**.



Intended actions in the funding period are the preparation of a research map, of a new homepage and brochure, the regular publishing of our newsletter and organisation of workshops and conferences. Our goal is to **strengthen the cooperation with every partner university** with exchange among students, professors, summer schools, common research projects and use of the lab offers.

We would like to kindly ask you to tell us your opinion and ideas how to strengthen the cooperation and our common project.

## Remote lab – experience from the Budapest University of Technology and Economics

Thanks to Mr. Axel Groniewsky, PhD student of the University of Technology and Economics Budapest, we can present you a practical experience example of the remote lab method.

Between 2008 and 2009 in the frame of Portuguese – Hungarian intergovernmental science and technology cooperation program the University of Porto (IDMEC / FEUP) and the Budapest University of Technology and Economics (BME / EGeRT) established a remote laboratory. Remote laboratories give students the ability to perform experiments on actual laboratory equipment in real-time over the Internet and the World Wide Web (Figure 1). The objective of this project was to share tools and methodologies in engineering education (TOMEÉ).

Sematic diagram of "Thermocouple delay-time measuring system"

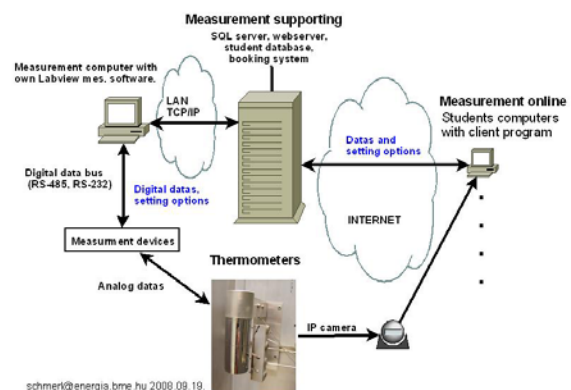


Figure 1 Sematic diagram of a Remote Laboratory system

The project had two main areas, namely: sharing facilities and Test-Rigs at a distance, and exploring the possibility of setting up new Remote Access facilities which cover both partners' common Research and Educational activities.



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A Remote Laboratory system was developed at the Jendrassik György Laboratory of the Department of Energy Engineering. A new thermocouple test rig was built (Figure 1), a data acquisition system developed and all the hardware and software background (Labview core) was set to work and accessed by an also newly built Laboratory homepage.



Figure 2 Thermocouple delay-time measuring system and sensors

The user interface was developed in a freeware (Adobe Flash Player) to make it accessible for all students. The homepage was set-up in three languages (Hungarian, Portuguese and English) just like the description of the experiment and its documentation (Figure 3).

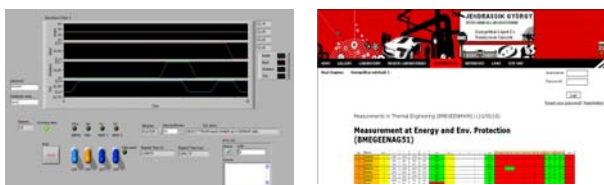


Figure 3 User interface and webpage of the remote lab

The initial trial tests started in January 2009. In May the students from ISEL (Mechanical Engineering Department) tested the BME Remote Lab and provided structured feedback. The main results were presented in paper conferences.<sup>12</sup>

<sup>1</sup> T. Restivo, I. Carvalho, R. Magalhaes, J. Mendes, Gy Gróf Remotely visiting academic laboratory using ICTs. In: P Andersson, C Borri (szerk.) Proceedings of SEFI 34th Annual Conference: Engineering Education and Active Students. Uppsala, Svédország, 2006.08.10-2006.08.12. Uppsala: pp. 64-72.(ISBN: 978-91-631-8387-4)

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### EU Strategy for the Danube Region adopted

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We are glad to inform you that we have submitted our common statement to the EU Strategy for the Danube Region. The consultation process closed in April and the Strategy, which contains a detailed action plan, was adopted on 8 December 2010.

The Strategy based on four pillars:

1. Connecting the Danube Region (e.g. improving mobility, encouraging *sustainable energy* and promoting culture and tourism)
2. Protecting the environment in the Danube Region (e.g. restoring water quality, managing environmental risks and preserving biodiversity)
3. Building prosperity in the Danube Region (e.g. *developing research capacity, education and information technologies*, supporting the competitiveness of enterprises and investing in people's skills)
4. Strengthening the Danube Region (e.g. stepping up institutional capacity and improving cooperation to tackle organised crime)

We would like to proudly inform you that numerous aspects from our common statement were admitted in the strategy. One of the most important questions of the section "Building prosperity" is the topic **education and research**: "Targeted support for research infrastructure will

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<sup>2</sup> I S Carvalho, A Penninger, Gy Gróf, A Bereczky, G Schmerl, M T Restivo Utilization of Interactive Internet in High Education. In: 9th WSEAS International Conference on MULTIMEDIA, INTERNET & VIDEO TECHNOLOGIES: MIV '09. Budapest, Magyarország, 2009.09.03-2009.09.05. WSEAS Press, pp. 86-92. Paper 14. (ISBN: 978-960-474-114-4)



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stimulate excellence and deepen networking between knowledge providers, companies and policy-makers."



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As part of the political process of preparing the Strategy, the European Commission conducts further International Stakeholder Conferences. The conference -with the themes: transport, energy and environmental issues - was organized on 19/21 April 2010 in Vienna and Bratislava. One of the main objectives of this conference was to discuss the issues of energy. Indeed, this is a high priority on the agenda of the EU as confirmed by the recently proposed strategy 'EU2020' The Region is bound by the river but water can not be managed in isolation. The strategy needs not only an overall cross-sector approach, but also a territorial dimension in consideration of every stakeholder level. The speakers presented not only a strong political support to the strategy, but also many technical ideas, concrete measures. In the workshop "Clean and secure energy - Danube region realities" was the triple challenge of the energy supply stressed. The questions of the competitiveness, the sustainable development and the security of supply must be accomplished together at regional, local and private level.

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<sup>3</sup> Action Plan European Union Strategy for the Danube Region  
SEC(2010) 1489 final

To bridge a gap until the possible spreading of the renewable energy sources is an effective use of the energy mixes temporary needed. Alternative fuels and fossil fuels will have remained the backbone of energy system for the next years.

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### Common actions

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As we mentioned we are going to update our **homepage**. It is an important step that this website should be linked with the homepages of the partner universities to make our project better known. We would like to kindly ask you to support us in this process, if you are willing to make a similar linking. Long-term goal is to translate the main contents in our languages.

We would be very glad if we could count on your contributions to the **research landscape** and our **newsletters**. These platforms provide us an opportunity to present our activities each other and other stakeholders in our regional network.

We would like to take this opportunity to thank you for the partnership and wish you a new year filled with success and joy.

We look forward to working with you 2011 as well.

Yours faithfully

Gerd Heilscher

and Csilla Csapo

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