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Renewable Energy Virtual Laboratory REVLAB

IPA HUSRB 1203/214/248



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Hungary-Serbia IPA Cross-border Co-operation Programme

Renewable Energy Virtual Laboratory - REVLAB -

IPA HUSRB 1203/214/248



Powering Sustainable Future

global electricity consumption: 2 TW



Green Energy Sources

wind and solar farms use power electronics









Green Consumption

green transportation uses power electronics





Green Consumption

industrial automation uses power electronics



Developing Power Electronics

the classical way

very expensive and largely manual process



Developing Power Electronics

using real-time simulation

- replaces the classical lab with a desktop simulator



Developing Power Electronics

using real-time simulation

− transfer dev tools and methods from sofware engineering → power electronics



REVLAB Idea #1

the classical PE lab is replaced with

- 1. hardware-in-the-loop (HIL) hardware
- 2. application software

we want to make it available over the web

REVLAB Idea #2

- 1. set up a simulator farm
- 2. create network infrastructure for remote access



→make simulation available over the net in real time!

REVLAB Idea #3

users of REVLAB:

- researchers
- industry practitioners
- students

REVLAB Goals

- development of infrastructural and equipment capacities for research and knowledge transfer in the field of renewable energy
- 2. enable the researchers of two institutions to **access** laboratory premises from distance
- 3. work **together** more closely and more effectively
- 4. perform experiments safely

REVLAB Objectives

- 1. jointly develop the virtual lab
- 2. develop **web portal** and network infrastructure
- 3. develop **applications** for energy efficiency improvement
- make the latest achievements available globally

REVLAB Partner Institutions

University of Novi Sad, Faculty of Technical Sciences

- Department of Power, Electronic and Telecommunications
 Engineering
- Department of Computing and Control

University of Szeged, Faculty of Science and Informatics

Department of Technical Informatics

People, Time and Budget

people

- UNS: 1 mgmt, 11 researchers, 2 admins
- SZTE: 1 mgmt, 3 researchers

time: 16 months

- 4 reporting periods

total budget: 304.210 EUR

REVLAB Timeline

Activity	I	II	III	IV
Design of virtual lab	х			
Upgrade and develop equipment	х	х	х	
Web application design and development	х	х	х	х
Applications for renewable energy systems		Х	х	х
Technical documentation and application notes		х	х	х
Knowledge and technology transfer			х	х
Dissemination and promotional activities	х	х	х	х

More Information

forthcoming web site



REVLAB



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Good neighbours creating common future