

Laboratory-based Services for Smart Grids: Best Practices from the ERIGrid Project

Morning Session “Facilitating effective lab testing by lab users”

Moderation: Thomas Strasser, AIT

IRED 2018 Side Event

October 16, 2018, Vienna, Austria



Welcome and Introduction

- Bring together the relevant stakeholders, initiatives and projects to discuss the state-of-the-art and future aims in smart grid system level testing
- Fostering the knowledge exchange of running projects and initiatives, including [ERIGrid](#) Trans-national Access (TA) user projects
- The following research topics will be considered in the workshop
 - Improvement of existing labs with ICT systems
 - Developed advanced testing scenarios and corresponding methods form a systems integration point of view
 - Improvement of HIL-approach fostering system integration tests, combining co-simulation and real setups for advanced system integration tests

Morning Session Outline

- The ERIGrid Integrated Research Infrastructure for Validating Cyber-Physical Energy Systems – *Thomas Strasser*
- Hardware in the loop validation of regulation droop coefficients for minimum power losses in islanded microgrid (IDR) – *Tran Thi Tu Quynh*
- Data-Driven Detection of Events in Distribution Power Systems (3D/4D-Power) – *Reza Arghandeh*
- Optimized parameter settings of reactive power Q(V) control by Photovoltaic inverter (TIPI-GRID) – *Franz Baumgartner*
- Design and Validation of a Smart Charging Algorithm for Power Quality Control in Electrical Distribution System (AQUA) – *Ammar Alyousef*
- Comparison of Power Hardware-in-the-Loop Approaches for the Testing of Smart Grid Controls (Smart beats Copper) – *Falko Ebe*

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Afternoon Session “Improved laboratory-based services for smart grids”

Moderation: Gunther Arnold, Fraunhofer IEE

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Afternoon Session Outline

- Enhanced ERIGrid System-Level Testing Methods – *Gunter Arnold*
- Improved and Harmonised Smart Grid ICT – *Oliver Gehrke*
- Real-time simulation and hardware-in-the-loop methods – *Ron Brandl*
- System Integration Testing Procedures – *Luigi Pellegrino*
- Smart Grid Interoperability – *Evangelos Kotsakis*
- CAPRICA: A Testbed Demonstrating A Cyber-Secure Synchronous Power Island – *Kieran McLaughlin*
- Laboratory-based services for smart grids within the scope of SIRFN activities – *Jun Hashimoto*

Discussion & Wrap-up

- Challenges?
- Open issues?
- etc.

