

# Research Infrastructure Automation Workshop

Day 1: 24.09.2024

from 13:00 until 19:00

Place : DTU-Risø Campus

Day 2: 25.09.2024

from 09:00 until 14:00

Place : DTU-Risø Campus



Day 1

## Agenda

### Session 1: Collaboration: metadata and digital tools for facilitating research collaboration and data exchange

#### 13:00 - 13:20 Workshop opening

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|---------------|----------------------------------|--|
| 13:20 - 13:40 | Oliver Werth,<br><i>OFFIS</i>    | Presentation 1: Towards a National Research Data Infrastructure for Interdisciplinary Energy System Research (NFDI4Energy) |
| 13:40 - 14:00 | Jawad Kazmi, <i>AIT</i>          | Presentation 2: Dataspaces for Research – Technology, maturity, use cases  |
| 14:00 - 14:20 | Artjoms Obusevs,<br><i>ZHAW</i>  | Presentation 3: Overview of IEEE working group on big data and analytics   |
| 14:20 - 14:40 | Sebastian<br>Dupraz, <i>BRGM</i> | Presentation 4: Digital Twins Interoperability: challenge and perspectives   |

#### 14:40 - 15:00 Q&A

#### 15:00 - 15:20 Coffee Break

### Session 2: Automation: how energy system test setups become can repeatable and reproducible (and less complex to handle)

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|---------------|---|---|
| 15:20 - 15:40 | Kourosh Malek,<br><i>FZ Jülich</i>  | Presentation 1: The role of ontology and data management in cloud-connected automated labs  |
| 15:40 - 16:00 | Ammar Malik and<br>Terence O'Donnell,<br><i>University College<br/>Dublin</i> | Presentation 2: Automated Testing of Distributed Energy Resources (DER) : Use of an open source testing platform (OpenSVP) for testing smart inverters against European network connection standards EN50549 and VDE 4105 |
| 16:00 - 16:20 | Filip Pröbstl, <i>AIT</i>   | Presentation 3: Automated Test Setup Generation for Validating Smart Grids Software Ecosystems  |
| 16:20 - 16:40 | Santiago<br>Sanchez, <i>SINTEF</i>  | Presentation 4: Cyber-physical metropolitan area digital substations test bench for evaluating intrusion detection systems  |

#### 16:40 - 17:00 Q&A

### Laboratory tour & demo

- |               |                              |  |
|---------------|------------------------------|--|
| 17:00 - 18:20 | Lab Tour                     | Refreshment and Initiation of laboratory tour              |
| 18:20 - 18:40 | Oliver Gehrke,<br><i>DTU</i> | Global Configuration management for multi-site experiments |
| 18:40 - 19:00 | <b>Day 1 wrap-up</b>         | Configuration Management Demo                              |
| 19:00         | <b>Dinner</b>                | Dinner served in the laboratory facilities                 |

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Day 2

## Agenda

### Session 3: Coupling of Testing Facilities: Methods, Techniques and Technologies to couple large scale test resources from multiple RIs

#### 09:00 - 09:20 Workshop opening

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|---------------|---|---|
| 09:20 - 09:40 | Giuseppe Silano,<br><i>RSE</i>  | Presentation 1: Integrating Power-to-Heat Services in Geographically Distributed Multi-Energy Systems   |
| 09:40 - 10:00 | Vetrivel Subramaniam,<br><i>TU Delft</i> and Andres Acosta,<br><i>RWTH Aachen</i> | Presentation 2: Towards simplified and standardized experiments combining multiple research infrastructures: The ERIGrid 2.0 Universal API approach |
| 10:00 - 10:20 | Oliver Gehrke,<br><i>DTU</i> and Tesfaye Amare,<br><i>SINTEF</i>                  | Presentation 3: Laboratory Validation of Event-driven Co-simulation   |
| 10:20 - 10:40 | <b>Coffee break</b>   |   |
| 10:40 - 11:00 | Steffen Vogel,<br><i>OpalRT</i>   | Presentation 4: Simplifying real-time peer-to-peer data exchange between RIs using WebRTC protocols with VILLASnode                                 |
| 11:00 - 11:20 | Alkistis Kontou,<br><i>ICCS-NTUA</i>  | Presentation 5: Advanced Techniques for Extended-Range, High-Fidelity PHIL and GDRTS Testing Alkistis   |
| 11:20 - 11:40 | Luca Barbierato,<br><i>University of Torino</i>                                   | Presentation 6: Local Digital Real-Time Power System Co-simulation via Multi-phase Distributed Transmission Line Model                              |
| 11:40 - 12:00 | <b>Q&amp;A</b>  |   |
| 12:00 - 13:00 | <b>Networking lunch</b>   |   |
| 13:00 - 13:30 | tbd   | Heat system demo final results  |
| 13:30 - 14:00 | <b>Day 2 Wrap-up</b>  |   |