

# IPID4all Doctorate Research Exchange with University of Oldenburg

## Feedback report

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Exchange topic : Real-time Co-simulation capabilities  
of mosaik.

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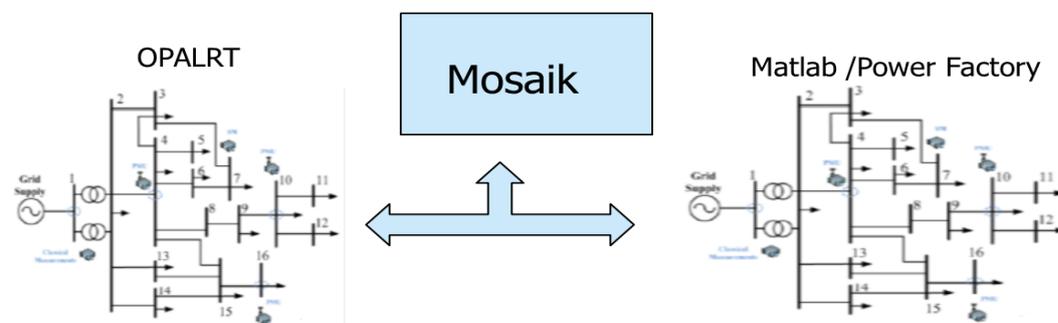
Lars, Fischer, Dr.

### Introduction

The exchange program was planned for two weeks period with the plan that the host institute can benefit from real time Hardware-in-the-Loop co-simulation expertise of the sending institute, and the sending institute can benefit from the co-simulation expertise using mosaik simulation platform developed by the host institute.

### Research Undertaken

During the exchange period, the first week was utilised for the detailed study on the working of the mosaik simulation framework with the practical insights from the developers of the same and in the second week more of learning the real time co-simulation capabilities of mosaik. The OPAL-RT / RTlab was used as the real time simulator and a previous project developed by offis team was studied for technical insight. Also explored the co-simulation of power factory using Mosaik.



Alongside with the study part, was trying to implement a real time model validation scenario. The scenario planned was using the sensors values from a power system model simulated in the OPALRT system a digital twin of the same is created and run as a power factory/matlab simulation in real-time using the mosaik framework.

### Personal Experience

The OFFIS team, welcomed us very warmly, and was helping us whenever required. They were very supportive and was open to share files that can benefit us in studying mosaik more. They even organised an after work party for a day, which was memorable.

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### **Conclusions**

The exchange program served as a good platform to study mosaik , and to explore the real time co-simulation capabilities of mosaik.

### **Outlook**

Further correspondence or clarifications are planned via email or via personal visit if necessary. The main advantage being that the both research groups are working together for the same project 'ERIGRID' and will be in touch.



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