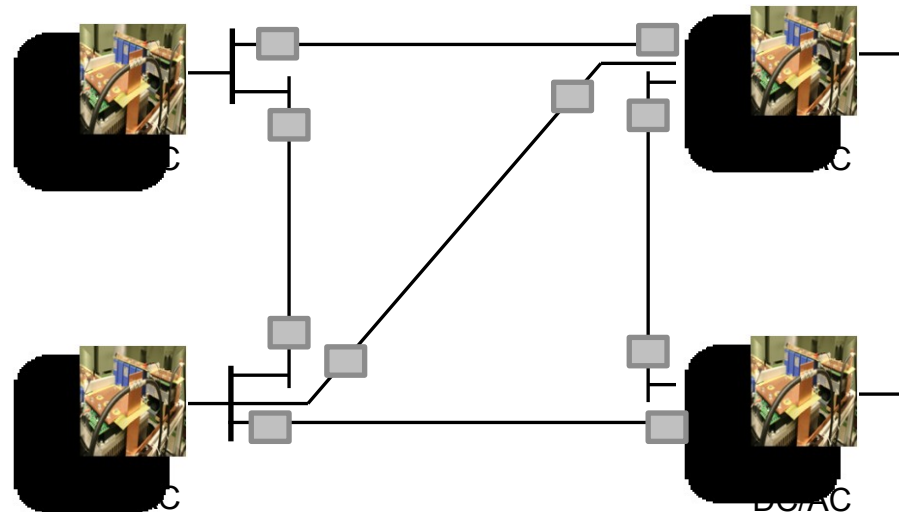


# HVDC Grids Protection and Control

## Motivation

The fast development of HVDC technology led to a new concept of electrical power grid, which is the HVDC **Supergrid** in order to facilitate the integration of green energies, the interconnection between regions and countries, as well as to improve the overall reliability and stability of the power system. Within this context new protection and control concepts need to be developed. Simulations will be conducted using PSCAD/EMTDC software.



## Objectives

- Analysis of HVDC models in PowerFactory and PSCAD/EMTDC.
- Developing of new protection concepts for HVDC grids.
- Analysis of ancillary services which can be provided by the HVDC grid converters.
- Analysis of the required grid codes for HVDC grids.

To these challenges and your own proposals within the scope of this subject I can supervise students (**Bachelorarbeit, and Masterarbeit**). Interested students can contact me at this email ([n.hemdan@tu-braunschweig.de](mailto:n.hemdan@tu-braunschweig.de))