Advanced Drivetrain Testing Strategy: Modeling and Simulation

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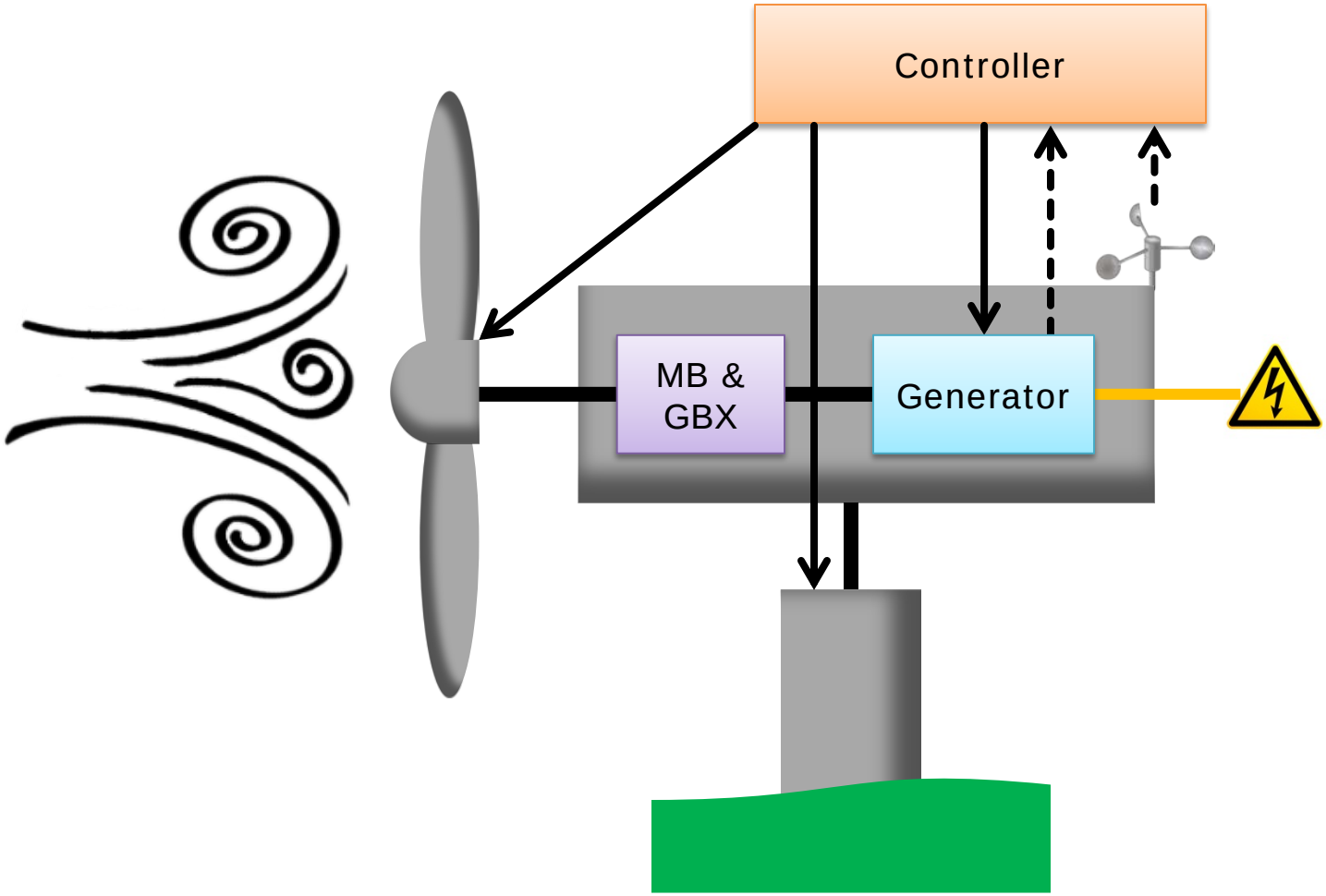
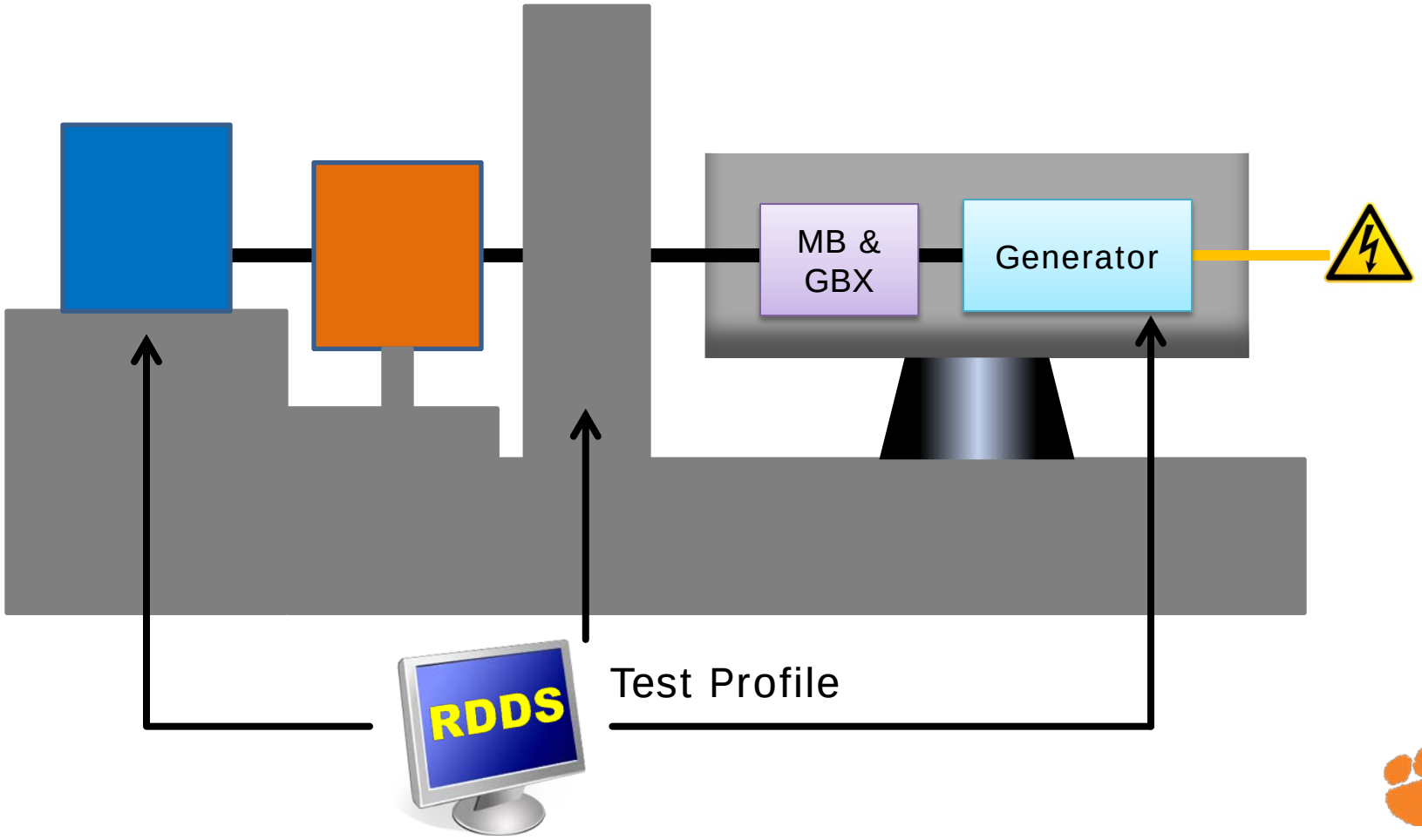
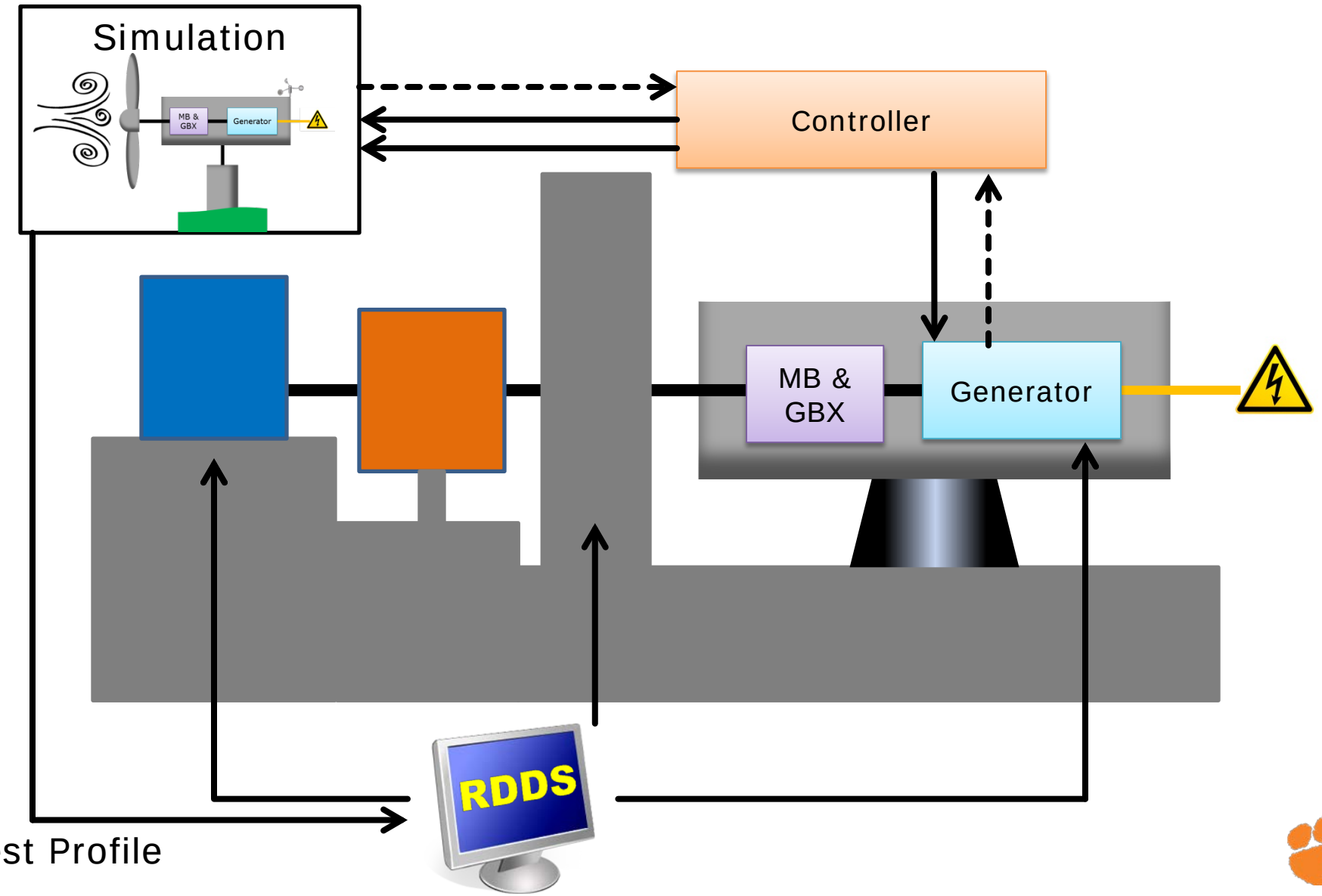
A Basic Wind Turbine



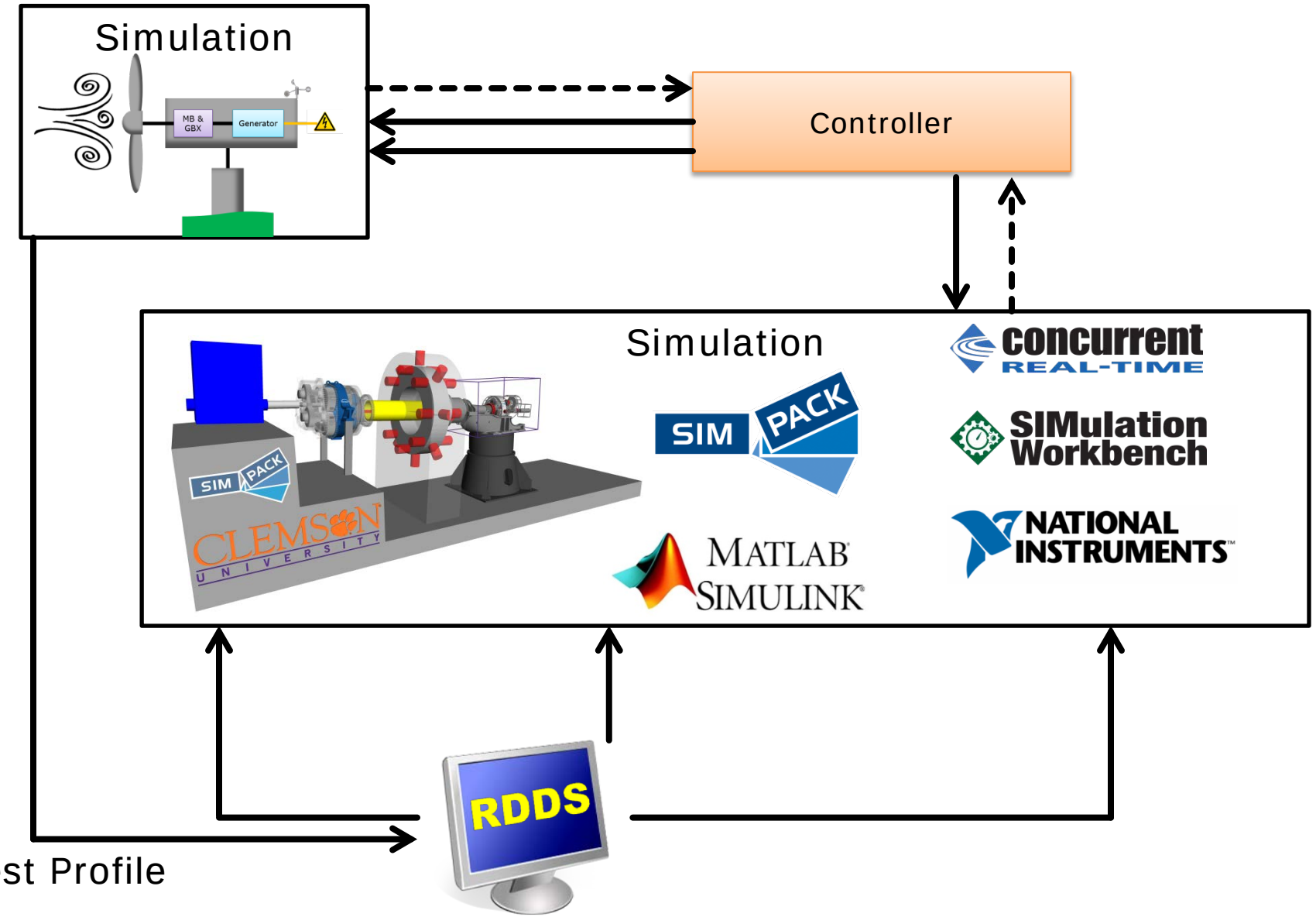
A Basic Test Bench



A Better Test Bench

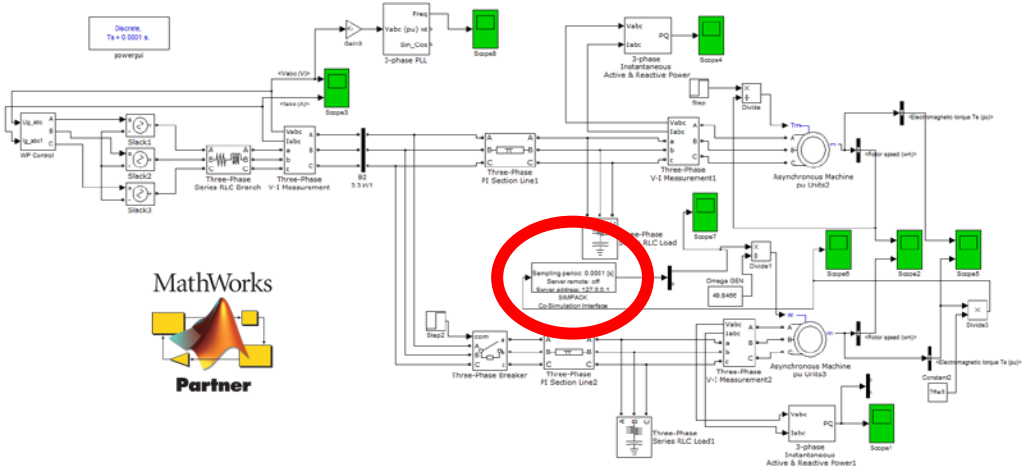


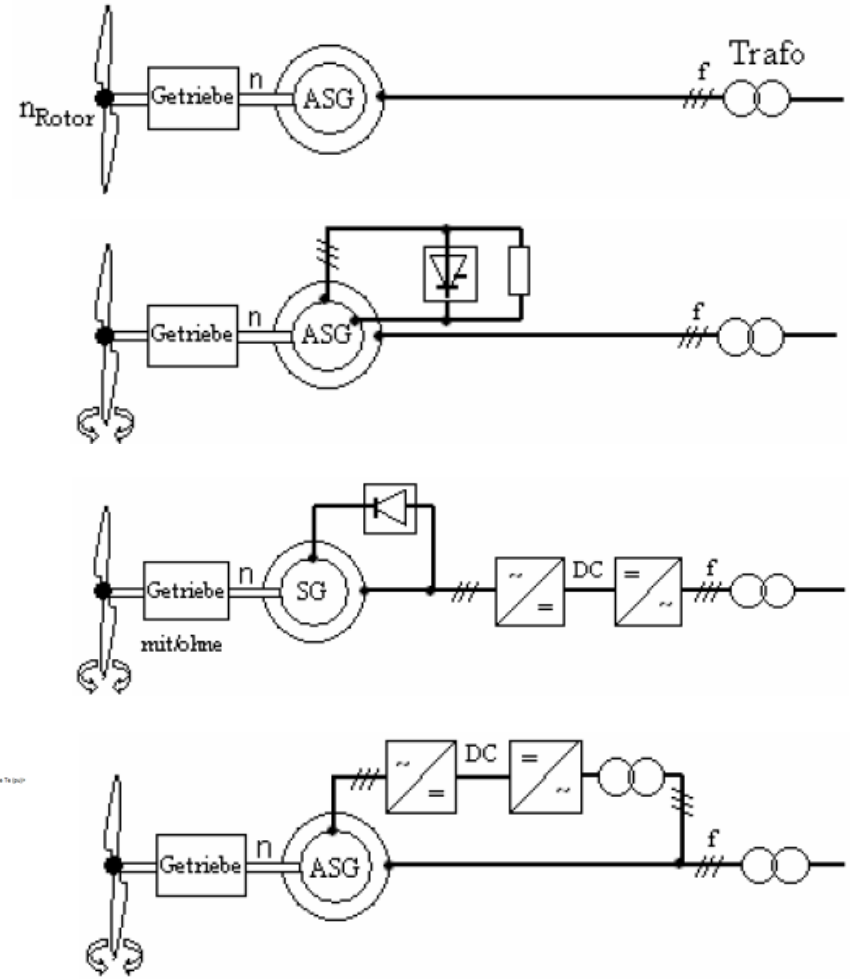
My Virtual Test Bench



Control and Grid

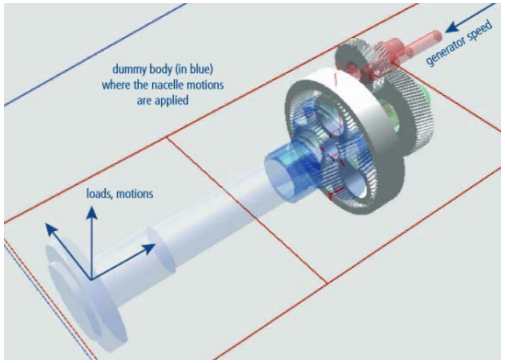
- Grid loss
- Fault ride through
- Electrical resonances
- Short circuit

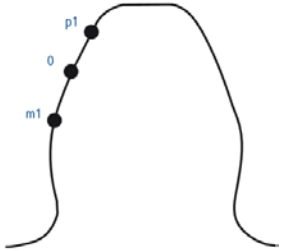


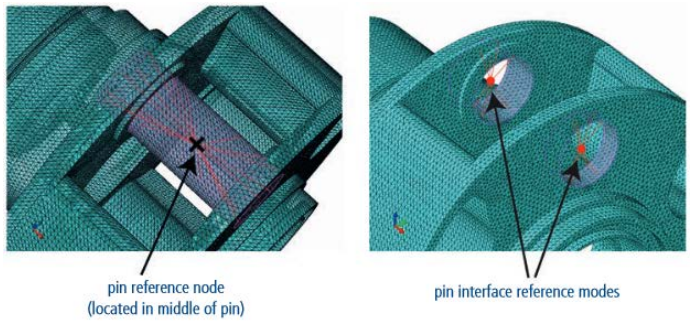


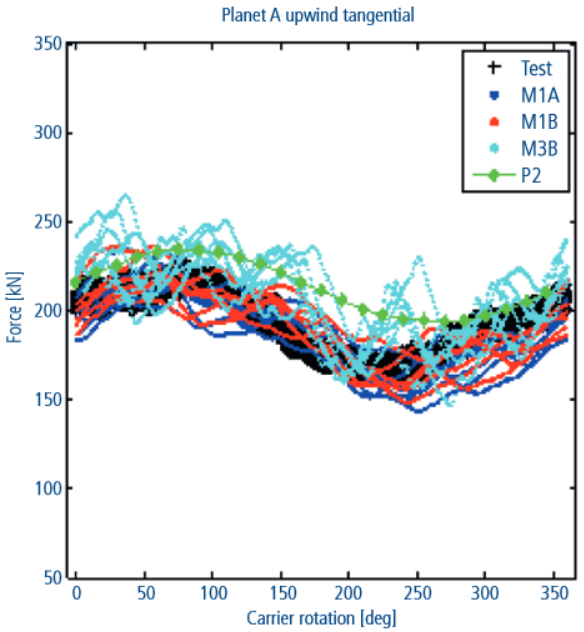
Model Validation

- Extensive comparison with 750 kW test-rig
- Flexible main shaft and planet carrier
- Detailed gearwheels
- Accurate comparison with measurements

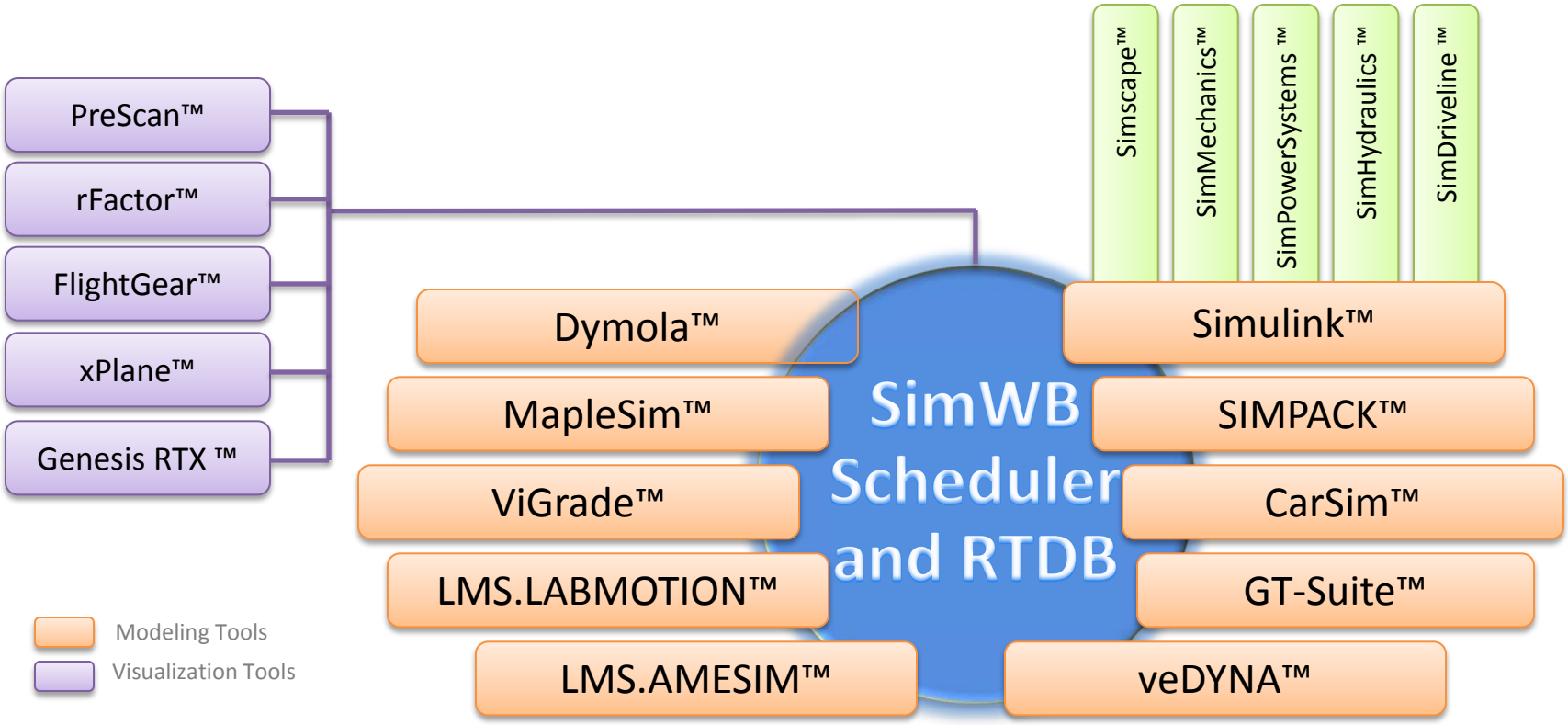








SIMulation Workbench™ (SimWB)
Multi-vendor-model Integration Platform



Leverage SIMPACK in SimWB

In SIMPACK

- Create/Edit model in SIMPACK
- Set Input and Output variables
- Configure the model to use SimWB Target

In SimWB

- Import SIMPACK model
- Create Test
- Run Test Sessions

SIMulation Workbench

concurrent REAL-TIME

CLEMSON UNIVERSITY EIC

Thank you…

Now, to the lab.