3rd Annual International Workshop on
Grid Simulator Testing of Energy Systems and Wind Turbine Powertrains

Hosted by:
The Florida State University Center for Advanced Power Systems
2000 Levy Ave. Tallahassee FL, 32310
November 5th and 6th

Workshop Agenda

Day 1 – November 5th

8:00 – 8:30	**Registration - Breakfast**

8:30 – 8:45	**Welcome and Opening Remarks**

8:45 – 10:15   **Session 1: Introduction Session**

FSU Upgrades to the CAPS PHIL facility - Selected Experiments with the new 5 MW MVDC Lab	Mischa Steurer
NREL – Status Update and Projects	Vahan Gevogian
Clemson – Status Update and Projects	Curtiss Fox

10:15 – 10:30	**Coffee Break**

10:30 – 12:00   **Session 2: Wind Turbine Drive Train Testing**

LORC - 10 MW Wind Turbine Test Facility and Grid Emulation	Lars Rasmussen
Fraunhofer - Presentation of Actual Status of DyNaLab Test Bench	Torben Jersch
RWTH Aachen - Commissioning of 4 MW Testing Facility for Wind Drives	Alex Helmedag

12:00 – 13:00   **Lunch and Open Discussion Topic**
Intro to Cyber Physical Systems

13:00 – 15:00 **Session 3: Advanced HIL Testing**

FSU - Processor In the Loop Tutorial	Fernand Diaz
Fraunhofer - Need of HIL for Testing Wind Turbines	Mohsen Neshati
FSU/NREL - Advancing Anti-Islanding Testing with PHIL	Karl Schoder
INL/NREL - Multi-Lab Connection	Rob Hovsapian

15:00 – 15:15 **Coffee Break**

15:15 – 17:15 **Session 4: Grid Emulation Advancements**

AIT - AC Grid Emulation for Smart Grid Applications	Wolfgang Hribernik
ABB - ACS 6000 Grid Simulator Updates	Ester Guidi
IREQ - Power HIL Simulator Prototype Development	Olivier Tremblay
KIT - Status of Energy Lab 2.0	Jörn Geisbüsch

17:15 – 18:00 **Session 5: Cyber Physical System**

RTDS Perspective
OPAL Perspective
Typhoon HIL

18:00 **FSU CAPS Tour and Dinner**
At CAPS – Dinner/Open Bar – Live Music by *Jazz Copeland*

Day 2 – November 6th

8:00 – 8:30 **Registration - Breakfast**

8:30 – 10:00 **Session 6: Lessons Learned In Testing**

Fraunhofer - Electrical Certification of Wind Turbines on DyNaLab Test Bench	Torben Jersch
WRD Enercon	Jair Cassoli
FSU - Lessons Learned from PHIL Experiments with Power Converters and Fault Current Limiters	James Langston

10:00 – 10:30 **Coffee Break, Networking**

10:30 – 12:00 **Session 7: Modeling and Experimental Validation**

EGSTON - Scaling Modular P-HIL Units from 200kVA to Multi MVA Systems	Gernot Pammer
FSU/NREL - Modeling and Characterizing a PHIL Amplifier	Karl Schoder
Clemson – System Level, Mechanical Model Validation of a 7.5 MW Wind Turbine Test Bench	Ryan Schkoda

12:00 – 12:30 **Closing Remarks – Announce Next Workshop**