The annual activities of the Smart Grid Center (SGC) endorsed by the Advisory Board had a four-fold purpose: 1) Finalizing the development of Membership Agreement of the Center; 2) Moving the Experimental Open Source Ecosystem (EXPOSE) platform from its temporal location to its final location hosted at the Center for Infrastructure Renewal (CIR) at the RELLIS Campus of Texas A&M System; 3) Conducting relevant strategic research projects while educating students; and 4) Developing training and workforce development courses.

**Developing a Smart Grid Center Membership Agreement**

To engage Members, such as utilities vendors and non-profit organizations focused actively on improving the power grid, a Membership Agreement has been developed with assistance from the Advisory Board Members and TEES Intellectual Property Licensing Office. It has been vetted by legal teams of industry partners and it will be available for the prospective members of the Center to sign.

**Moving the Experimental Open Source Ecosystem (EXPOSE) Platform to Final Location**

The novel EXPOSE platform, that integrates large-scale testbeds at virtual and physical levels to mimic new grid control solutions at various spatial and temporal scales, has been relocated to the Smart Grids Control Center hosted in the Center for Infrastructure Renewal (CIR) building at RELLIS Campus of Texas A&M. This new facility provides a world-class environment for research, teaching, training and workforce development.

**Strategic Project Focus Areas**

- **Synchrophasors and synchronized sampling technology for T&D applications;**
- **Cyber-physical security with emphasis on interactions between different critical infrastructures;**
- **Big data including weather impact analyses integrated into GIS framework;**
- **Flexible loads, including on-site energy storage and distributed generation at different scales;**
- **Renewables forecasting with focus on solar and wind generation at different voltage levels;**
- **Future whole sale ancillary service products and retail market participation strategies;**
- **Synthetic grids.**
New Large-Scale Research Project

“US-India Collaborative for Smart Distribution System with Storage (UI-ASSIST)” lead by Washington State University in collaboration with Drs. Mladen Kezunovic, Chanan Singh, and Miroslav Begovic (ECE, TAMU), and more from other organizations. DOE awarded $7.5 Million to US partners for a 5-year project starting in October 2017.

New Advisory Board Members

- Mr. Bill Abler, VP, Commercial Development & Innovation, Entergy Corp.
- Dr. Kevin Nowka, then Director, IBM Research – Austin (resigned to join ECEN faculty)
- Mr. Gary Racliffe, VP, Smart Grids, ABB Group – North America
- Mr. Cameron Smallwood, CEO & General Manager, United Cooperative Services

Information on all current Advisory Board (AB) Members can be viewed at http://smartgridcenter.tamu.edu/sgctamu/index.php/advisory-board

Advisory Board Meetings

- The 9th AB meeting was held at TAMU, College Station, TX, on Oct. 6., 2017;
- The 10th AB meeting was hosted by CPS Energy in San Antonio, TX, on Jan. 25., 2018;
- The 11th AB meeting was held at CIR, Bryan, TX, on May 7, 2018. It included a tour organized by the Center Directors with a demonstration by Dr. Kate Davis, and graduate students.

More than 140 attended including 55 students, 14 postdocs and research staff, 48 faculty members, and 15 representatives from industry (ABB, CNP, EPG, ComEd, Esri, GE, Landis+Gyr), government entities (NREL, PNNL), and non-profit organizations (EPRI, ERCOT). NSF Travel grant was awarded to 38 participants.

Twelfth IEEE CPE-POWERENG Conference

This event of the IEEE Industrial Electronics Society was held in Doha, Qatar on April 10-12, 2018.

Training

- Webinar sponsored by PSERC was presented by Dr. K. Davis: “Online Intrusion Tolerance and Response in Power Systems” on January 23, 2018.
- SGC-Qatar conducted 3 training events and a webinar:
  - “The Hazardous Areas Classification and Intrinsic Safety for a Safe Workplace Short Course”;
  - “The Fundamentals of Electricity and Electrical Safety in the Workplace Short Course”;
  - “Electrical Transformers and Switchgears; Faults, Inspection, Testing, Maintenance and Trouble Shooting”.
- Webinar sponsored by IEEE was presented by Dr. H. Abu-Rub on May 31, 2018: “Future Grid Paradigm – Smart Grid Architecture”

Expanding the SGC Portfolio

New collaborating faculty members joined:

- Kate Davis (Associate Professor, Electrical & Computer Engineering)
- Thomas Overbye (Professor, Electrical & Computer Engineering)

Future Plans

- Recruiting the SGC Members;
- Enhancing testbeds for research, education, and industry training;
- Expanding the SGC Advisory Board;
- Organizing short courses;
- Hosting the First IEEE International Conference on Smart Grid Synchronized Measurements & Analytics (SGSMA) in May 2019;
- Organizing workshops and tutorials associated with SGSMA 2019;
- Hosting many visits from industry and government organizations.