Oakland University student discovers new method to address communication interoperability issues in Smart Grids

The Oakland University and School of Engineering and Computer Science communities are invited to attend Alaa Alaerjan's defense of his Ph.D. dissertation. Seating is limited. RSVP with Katie Loodeen at loodeen@oakland.edu.

A Hybrid Communication Platform for Supporting the Interoperability in Smart Grids

Committee: Dae-Kyoo Kim, Ph.D. (Chair), Hua Ming, Ph.D., Anyi Liu, Ph.D., Daniel E. Steffy, Ph.D.

Time: **11:00 a.m. – 1:00 p.m.**
Date: **Monday, March 4, 2019**
Location: **347 EC**

The communication system in a smart grid should seamlessly connect different parts of the power gird. However, in the current practice, different areas of the power system use different communication paradigms such as publish-subscribe and client-server. Consequently, this has caused significant communication interoperability issues among the applications that are built upon different paradigms. The heterogeneity of the communication paradigms has also complicated the development of applications since it is difficult to adopt a single communication platform to serve across different power domains.

In this research, we propose a hybrid communication platform to support communication interoperability in smart grids. The objectives of the approach are to allow broader data sharing and to facilitate the development of applications in smart grids. In the approach, we first describe two communication models to empower both publish-subscribe and client-server for supporting the interoperability of communication. Then, we describe building the communication models upon a common data model to allow power applications to interoperate and speak the same language.