

PRESS RELEASE

From the University of Illinois Information Trust
Institute



Illinois's ITI to Collaborate with Korea on Smart Grid Security

The Information Trust Institute (ITI) at the University of Illinois has just entered into a cooperative research partnership with a research agency of the South Korean government. The agreement, which is the first step in building a collaborative research and development program focusing on “smart” power grid security, is one component of a larger, coordinated set of energy-related research agreements that are simultaneously taking place between South Korea and various research facilities in Illinois.

On July 21 a document was signed by representatives of the University of Illinois and Korea's Attached Institute of Electronics and Telecommunications Research Institute (ETRI), reflecting their shared opinion that “cyber security is one of the most critical issues in stable electric power generation, transmission, distribution, and effective utilization of electricity” and agreeing to pursue collaborative research in this area.

The new relationship between ITI and ETRI originated in a high-level agreement between the Presidents of the United States and South Korea, expressing the intention of the two nations to collaborate in a range of areas. Energy-related research was one of the key focus areas, with a particular emphasis on development of renewable technologies such as solar and wind power, strategies for reducing consumption of fossil fuels, and smart grid security.

Research institutes within Illinois quickly assumed a central role in the collaboration plans. “It happened to be the case that Illinois interests match up well with Korea's,” explained William H. Sanders, Director of ITI. “There are a number of organizations in Illinois doing leading-edge research in exactly the areas that the Koreans want to pursue.” The Illinois Department of Commerce and Economic Opportunity coordinated the process of matching Korean needs to relevant research entities in Illinois. The result is this week's series of eight agreements between Korean officials and various Illinois organizations, ranging from the University of Illinois to the Building Owners and Managers Association of Chicago (BOMA/Chicago), the Illinois Science & Technology Coalition, and the Illinois Institute of Technology (IIT). Planned projects cover training and workforce development activities as well as a variety of research projects.

“Illinois is proud to be a national leader in smart grid innovations,” said Illinois Governor Pat Quinn. “Now, in partnership with leading Korean enterprises, the University of Illinois and entrepreneurs across our state have additional resources to drive the smart grid revolution and create more Illinois jobs.”

ITI was chosen to address smart grid cyber security efforts due to the prominence of its Trustworthy Cyber Infrastructure for the Power Grid (TCIPG) Center, which is funded by the U.S. Departments of Energy and Homeland Security and is one of the largest academic smart grid security efforts in the U.S. The term “smart grid” refers to the integration of the existing physical infrastructure of the power distribution grid with an advanced communication and control cyber infrastructure, with the ultimate goal of making energy transmission and distribution more efficient, and therefore cheaper for consumers and less wasteful of resources. Such integration of cyber infrastructure into the grid introduces complex security vulnerabilities

that power providers are working to mitigate.

ITI's work with ETRI will focus on an immense research testbed that is now under construction on the island of Jeju, a self-governing province south of mainland South Korea. Due to cost limitations, research on power grid security often relies heavily on modeling and simulation, using little or no real power system equipment. Jeju's testbed is exceptional in that it incorporates a large amount of full-scale, real-world equipment, such as real wind turbines and real electric vehicles. The Jeju research environment is considered to have such strong potential global significance that the national leaders attending this November's G-20 summit in Seoul, South Korea's capital, will be invited to attend an associated "Korea Smart Grid Week" event in Jeju as well.

ITI's work with ETRI will be led by Professor Peter W. Sauer of the Department of Electrical and Computer Engineering at Illinois. "We'll be able to use our knowledge to help the Koreans with this large testbed," said ITI's Sauer. "At the same time, ITI's smart grid research is going to benefit in turn from the terrific opportunity we'll have to work with the Jeju testbed. We expect this collaboration to be highly beneficial to both sides."

According to its website, ETRI is South Korea's largest government-funded research institution that specializes in information and communications technology.

About the Information Trust Institute (ITI)

The Information Trust Institute is a multidisciplinary cross-campus research unit housed in the College of Engineering at the University of Illinois at Urbana-Champaign. It is an international leader combining research and education with industrial outreach in trustworthy and secure information systems. ITI brings together over 100 faculty, many senior and graduate student researchers, and industry partners to conduct foundational and applied research to enable the creation of critical applications and cyber infrastructures. In doing so, ITI is creating computer systems, software, and networks that society can depend on to be trustworthy, that is, secure, dependable (reliable and available), correct, safe, private, and survivable. Instead of concentrating on narrow and focused technical solutions, ITI aims to create a new paradigm for designing trustworthy systems from the ground up and validating systems that are intended to be trustworthy. www.iti.illinois.edu

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