



KSGA & SGIP Joint Workshop Agenda

DATE: Monday, November 7, 2016

TIME: 8:00 am to 5:00pm

LOCATION: Ohio Room, Capital Hilton

AGENDA

AGENDA ITEM	TO BE PRESENTED BY	TIME
Registration		6:00am - 7:00am
Breakfast & Networking		7:00am - 8:00am
Welcome and Opening Remarks	<ul style="list-style-type: none"> • David Forfia - SGIP -- Chair Board of Directors • Robby Simpson – GE, SGIP Board of Directors, Workshop Chair 	8:00am - 8:15am
Overview Korea Smart Grid Association Focus KSGA discusses 2016 priorities, focus areas, progress.	<ul style="list-style-type: none"> • Youngkyu Ko, Senior Researcher, KSGA 	8:15am - 8:30am
Overview SGIP Focus Areas SGIP discusses 2016 focus areas: OpenFMB™ and Orange Button SM and Technical Program updates.	<ul style="list-style-type: none"> • Aaron Smallwood, VP of Technology SGIP 	8:30am - 9:00am
Microgrids and Distributed Energy Resources Joint Session to report on progress of microgrids and the impact of DERs in the U.S. and the MG/DER Software Platform in Korea. Dr. Hefner will focus on DER and Microgrid standards coordination in the U.S.	<ul style="list-style-type: none"> • Dr. Allen Hefner Jr., NIST • Junsung Kim, KEPRI 	9:00am - 9:45am
Break & Networking		9:45am - 10:15am
GMLC Projects Update SGIP presents an update on GMLC projects in the U.S.	<ul style="list-style-type: none"> • Steve Widergren, PNNL 	10:15am - 10:45am
Current Market and Standardization Progress of ESS Aggregators Session to report on Current Market and standardization Progress of ESS Aggregators in Korea.	<ul style="list-style-type: none"> • Jaewon Lee, R&D Center Manager, POWER21 	10:45am - 11:00am
Law and Regulatory Impacts for Building Smart Grids SGIP to report on regulatory impacts of building Smart Grids in the U.S.	<ul style="list-style-type: none"> • Commissioner Nick Wagner, Iowa Utilities Board 	11:00am - 11:30am

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Lunch & Networking		11:30am - 12:30pm
Test Bed Update Joint Session to report on progress of test bed efforts in the U.S. and Korea.	<ul style="list-style-type: none"> • Aaron Smallwood, VP of Technology SGIP • David Nickerson, Director of Business Development, LSIS 	12:30pm - 1:15pm
Cybersecurity Joint Session to report on progress of cybersecurity efforts in the U.S. and Korea.	<ul style="list-style-type: none"> • Suzanne Lightman, NIST • Jungtaek Seo, Professor, Soon Chun Hyang University 	1:15pm - 2:00pm
Break & Networking		2:00pm - 2:15pm
Overview of IPRM/ANSI Standard and Testing SGIP discusses the importance of testing, the IPRM/ANSI standard.	<ul style="list-style-type: none"> • Cuong Nguyen, NIST • Khaled Masri, NEMA 	2:15pm - 3:00pm
Open Discussion Q&A Joint Session open discussion on standards, collaboration, R&D, SG Frameworks, across the U.S. and Korea.		3:00pm - 3:30pm
H/B/I2G Home, Building, Industrial to Grid Update Joint session: an update on Smart Grid building, home, and industrial developments in the U.S. and Korea.	<ul style="list-style-type: none"> • Dr. Kenneth Wacks, Management & Engineering Consultant • Jinseek Choi, Professor, Hanyang University 	3:30pm - 4:15pm
Wrap Up and Next Steps Joint Session to wrap up discussion, next steps and actions.		4:15pm - 4:45pm
SGIP Annual Members and Board of Directors meeting SGIP Annual Members & Board Directors Meeting in the Massachusetts room.	<ul style="list-style-type: none"> • BoD • All 	5:00pm - 6:00pm
Welcome Reception Capital Terrace		6:00pm - 7:30pm

Korea Smart Grid Association Speakers



Jin Seek Choi
Professor, Hanyang University, Korea

Jin Seek Choi is presently a professor at Hanyang University, Korea. His current research interest includes energy management and orchestration, distributed energy management, control and management framework, software defined networking, and optical Internet in next generation wired and wireless networks.

He received his BSEE from Sogang University in 1985, and MSEE and Ph.D degree from the Korea Advanced Institute of Science and Technology (KAIST), Korea, in 1987 and 1995, respectively. He worked at Gold Star Information and Communication Co. from 1987 to 1991 where he worked on the development of Ethernet, FDDI bridge, and ISDN systems. He worked at Kongju National University from 1995 to 2001. He worked for School of Engineering at Information and Communications University (ICU merged into KAIST) from 2001 to 2003. He also worked for National Institute of Science and Technology (NIST), Washington D.C., U.S. as a Visiting Researcher from September 1998 to August 2000, and 2015 to 2016.



Jun-Sung Kim
Senior Researcher, Korea Electric Power Research Institute

Jun-Sung Kim was born in Seoul, Korea on Apr. 13, 1981. He received Master degree in computer science from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, 2008. He had worked at Korea Smart Grid ~~Institute~~[Institute](#) (KSGI) for 2 years. He is currently working as a senior researcher in Software Center, Smart Distribution Lab., Korea Electric Power Research Institute (KEPRI) since 2012, August. He was also in charge of distributed energy resources interface standardization in Korea. His research interest is the micro grid software platform. He has published more than 20 papers in peer review journals or international

conferences.



Youngkyu Ko
Senior Researcher, KSGA

Young kyu Ko is Senior Researcher in Korea Smart Grid Association (KSGA). He is currently working in Standards Development Team, R&D Division. He is responsible for developing standards related to smart grid technologies, and analyzing smart grid industry trends. He holds B.S. in Industrial Engineering from Korea University.



Jaewon Lee
Project Manager, Power21 Corp

Jaewon Lee was born in Seoul, Korea on Aug. 18, 1981. He received Master degree in electric engineering from Chungnam National University, CNU, Daejeon, Korea, 2010. He had worked at POWER21 Corp for 6 years. He is currently working as a Project Manager in Power System IT Laboratory, [Power21](#), [Power21](#) Corp since 2013. He was also in charge of [CIM](#) (IEC-61970) interface standardization in Korea. His research interest is the EMS and Microgrid platform.



Dave Nickerson
Director of Business Development, Energy Storage Systems, LSIS

LSIS (LS Industrial Systems) is a major Korean equipment and technology provider with a growing energy storage and renewables business. Part of the LS Group (\$19 billion in assets), LSIS offers a full line of electrical and automation equipment backed by 3,500 employees and over 80 years of electric industry experience. Over 60MW of LSIS bidirectional inverters are in operation in several energy storage applications, together with 52MWh of batteries from multiple suppliers. LSIS is working to expand beyond its core markets in Korea and Asia with energy storage as focus. To support energy storage projects, LSIS can potentially provide all the electrical equipment from the inverters to the utility interconnect.

At LSIS, Dave is responsible for business development activities in the eastern US. Prior to LSIS, he was at Beacon Power for 3 years and led commercial efforts on Beacon's flywheel energy storage technology.

With over 36 years of experience in the electric power industry including prior commercial positions at Mystic River Energy Group (independent consulting firm), El Paso Merchant Energy, New England Electric System (now National Grid), and Westinghouse Electric, Dave has represented the business interests of a major equipment and services provider, regulated electric utilities, independent power projects both in development and operation, energy trading companies, equity investors, commercial, industrial and municipal retail customers, and state agencies.

Dave holds a B.S. in Electrical Engineering from Tufts University and M.S. in Industrial Administration (MBA) from Carnegie Mellon University.



Jungtaek Seo
Professor, Soon Chun Hyang University

Jungtaek Seo, Ph.D. received his degree in information security from the graduate school of Information Security, Korea University, in 2006. From November 2010 to February 2016, he has worked for National Security Research Institute as a senior researcher as well as the head of Infrastructure Protection Research Department. Currently, he is an assistant professor in Department of Information Security Engineering, Soonchunhyang University. He has been a Principal Investigator of several government sponsored research project in SCADA, Smart Grid, nuclear power plants. Recently, he has been actively working in the area of smart grid, in particular with

respect to standard and policies. His research interest includes SCADA, Smart Grid, nuclear power plants, Smart City, CPS (Cyber Physical System).

SGIP Speakers



David Forfia – Chairman, SGIP
Director, IT Projects, Electric Reliability Council of Texas (ERCOT)

David Forfia is Director, IT Projects at the Electric Reliability Council of Texas where he is responsible for the upgrade and transition of all production IT services into two new data centers. He has served in multiple roles at ERCOT since 2006 and has represented ERCOT on the Information Technology Committee (ITC) of ISO/RTO Council (IRC) since its 2008.

Previously, he was responsible for ERCOT's IT functions supporting the bulk electric system including application development, network and telecommunications, data center operations, application production support and IT infrastructure. He also served in multiple leadership positions during the implementation of the Texas Nodal program, including the deployment of the technology infrastructure, integration, testing and internal operational readiness for the systems.

David also served as the Director of Information Technology Services and was Deputy Director and Chief Information Officer for an \$18B pension fund for Austin Energy.

David holds a BBA in Finance from the University of Texas at Austin and an MBA from St. Edward's University.



Dr. Allen Hefner Jr.
Electronics Engineer, NIST

Dr. Hefner is an electronics engineer in the Microelectronics Device Integration Group (683.05) in the Semiconductor & Dimensional Metrology Division (683) of the Physical Measurement Laboratory (PML) at the National Institute of Standards and Technology (NIST). Dr. Hefner is a member of the NIST Smart Grid Team and is the Project leader for NIST's Power Devices and Thermal Measurements Project. He is specifically focused on advancing electrical interconnection standards and power conversion technologies necessary to enable high penetration of renewable/clean energy sources, energy storage systems, and plug-in electric vehicles. He joined NIST, Gaithersburg MD in 1983 and has held several positions including Group Leader for Semiconductor Devices, Project Leader for Power Devices and Thermal Measurements, Project Leader for Integrated Sensor System-on-a-Chip, and Project Leader for Semiconductor Device Simulation and Technology Computer-Aided-Design.

Dr. Hefner is the author of 75 publications, holds one U.S. patent, and has received a number of best paper and technical achievement awards. In 1993 he received a U.S. Department of Commerce Silver Medal Award for his pioneering work in developing the theoretical foundation and understanding used for device optimization and circuit utilization of the Insulated Gate Bipolar Transistor (IGBT). In 1996, he received the NIST Applied Research Award for development of the IGBT model provided within the most widely used power circuit simulation programs. Recently, in 2008 he received an appreciation award from the U.S. Department of Energy, Assistant Secretary of Fossil Energy for contributions to high-megawatt power conversion technology for Clean Energy Systems, and in 2009 he received a NIST Bronze Medal Award for technical leadership in development and application of the first high-voltage, high-frequency Silicon-Carbide switch mode power conversion devices.

Dr. Hefner was elected as a Fellow of the IEEE in 2001 where he has been active in the Power Electronics Society, the Industry Applications Society, the Electron Devices Society, and the Power and Energy Society. He has served on a number of IEEE Technical and Conference Committees including serving as the Transactions Review Chairman for the IEEE Industry Applications Society Power Electronics Devices and Components Committee (1989–1997) and serving as the IEEE Electron Devices Society Standards Technical Committee Chairman (1996–2001). In 2005 he served as the Chairman of the International Semiconductor Device Research Symposium and he has served as a Steering Committee member for the Government Microcircuit Applications and Critical Technology Conference since 2006.

Dr. Hefner has served as the Chairman of the Interagency Advanced Power Group (IAPG), Electrical Systems Working Group (ESWG) since 2007 where he leads program coordination and information exchange among different federal government agencies in the area of electrical power conditioning. Dr. Hefner has also recently initiated and hosted several workshops at NIST on high-megawatt power conditioning systems including: the "High Megawatt Converter Workshop" held at NIST on January 24, 2007, the "High-Megawatt Converter Technology R&D Roadmap Workshop" held at NIST on April 8, 2008, the "NSF Workshop on Advanced Power Conditioning for Alternate Energy Systems" held at NIST on May 28-29, 2008, the "Workshop on Future Large CO₂ Compression Systems" held at NIST on March 30-31, 2009, and the "Workshop on Challenges to Growth of Grid Connected Electronics" held at NIST on December 11, 2009.

Suzanne Lightman

Senior Information Security Advisor, National Institute of Standards and Technology (NIST)

Suzanne Lightman has over a decade of experience in information security policy in positions all over the government, as well as in the private sector. She has held positions in both the legislative and executive branches, which gives her a unique perspective on the development and implementation of government policy. Currently, Ms. Lightman is a Senior Advisor at the Computer Security Division of the Information Technology Lab at the National Institute of Standards and Technology (NIST). In that position, she is involved with a diverse portfolio of topics including development of the Cybersecurity Framework required under Executive Order 13636, cybersecurity in cyber-physical systems, identity management, and cybersecurity policy. She is also one of the team developing the Privacy Risk Management Framework at NIST.



Khaled Masri

Program Manager, NEMA

Khaled Masri is a Program Manager at the National Electrical Manufacturers Association (NEMA). Mr. Masri has over 25 years of professional experience with key positions in strategic development and implementation of codes, standards and conformity assessment systems. Prior to re-joining NEMA in 2015, Mr. Masri worked as international consultant where he advised various governments and global development organizations in over 12 countries. He had served as U.S. Standards Representative in Saudi Arabia and the Gulf Cooperation Countries (GCC) region as part of the National Institute for Standards and Technology (NIST). Mr. Masri had also worked as: Director of Codes and Standards at the Building Owners and Managers Association; Project Engineer at the National Conference of States on Building Codes and Standards; and Building Official Mechanical Engineer/Inspector at both Henrico and Chesterfield County in Virginia. Mr. Masri holds B.S. in Mechanical Engineering from the University of Toledo. He has holds Certificate in Business Management from George Mason University. He is Certified as Six Sigma Green Belt, and Certified Quality Auditor.



Cuong Nguyen

National Institute of Standards and Technology (NIST)

Cuong Nguyen joined the National Institute of Standards and Technology (NIST) in 2010 and leads the Smart Grid Testing and Certification Project in the Smart Grid and Cyber-Physical Systems Program Office of the Engineering Laboratory. He works with industry to support standards-based interoperability test programs to help accelerate smart grid deployments, and he also manages the NIST Smart Grid Advisory Committee. Cuong is the vice chair of the Smart Grid Interoperability Panel (SGIP) Smart Grid Testing and Certification Committee (SGTCC). In addition, Cuong coordinates international outreach efforts through bilateral and multilateral engagements.



**Robby Simpson PhD – Workshop Chair, SGIP Board of Directors
System Architect, GE Grid Solutions**

Robby Simpson, PhD, is a System Architect for GE Grid Solutions, where he guides the architectures for GE smart grid systems. Accordingly, Robby divides his time between designing and evaluating GE Grid Solutions' architectures with particular attention to scalability, security, and interoperability and standards bodies' activities.

Robby has been engaged in the smart grid industry for a number of years, particularly in the areas of AMI, metering, demand response, and home area networking, and has been heavily involved in accelerating standards for smart grid interoperability. Robby is active in IEEE (he is a member of the IEEE-SA CAG and Vice Chair of IEEE 2030.5), ANSI, IEC, IETF, SGIP (he is a member of the Board of Directors and Vice Chair of OpenFMB), and the ZigBee Alliance. Through these efforts he not only helps to accelerate standards development, but also ensures the adoption of those standards within GE and the market as a whole.

Robby received his B.S. in Computer Engineering from Clemson University and his M.S.E.C.E. and Ph.D. (Electrical and Computer Engineering) degrees from the Georgia Institute of Technology (Georgia Tech), where he focused on Internet measurements, large-scale simulation, network protocols, and information security. Prior to focusing on smart grid, Robby worked on satellite communications at MIT's Lincoln Labs.

Robby has published several refereed conference and journal papers on topics ranging from network measurements, network security, and network simulation to superconductor behavior. Robby has also received numerous awards for his academic and industry efforts and is an Eagle Scout (and still believes it to be worth mentioning all these years later).

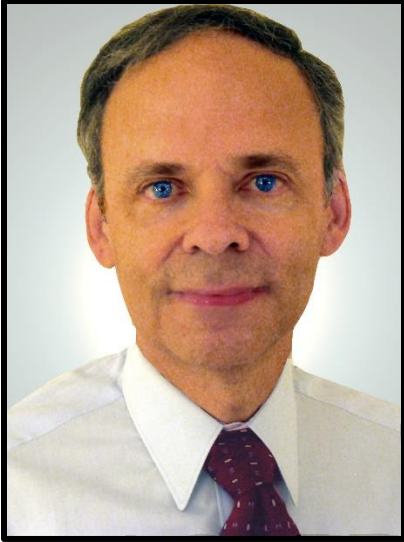


**Aaron Smallwood
VP of Technology SGIP**

Aaron Smallwood is VP, Technology at SGIP. He is responsible for leading SGIP's Program Management Office and working with member committees and groups in advancing SGIP's technology strategy and agenda.

Aaron has been in Information Technology for 20 years and in the utility industry for the last 15 years. As Director of IT Operations at the Electric Reliability of Council of Texas (ERCOT), Aaron was responsible for the multi-data center IT operations of ERCOT's real-time grid and market systems, deregulated retail market systems, Enterprise Data Warehouse, systems integration, and market settlement systems. In other roles at ERCOT he led business/technology alignment, IT strategy development, program financial management for the Texas Nodal Market Implementation, IT stakeholder relationship management, and the IT divisional project office.

Prior to ERCOT, Aaron was responsible for managing the relationship between IT and utility business units at Aquila, Inc., working with utility and IT leaders to ensure that IT services were aligned with business objectives and that IT was positioned to support their needs.



Dr. Kenneth Wacks
Management & Engineering Consultant

Dr. Wacks has been a pioneer in establishing the home systems industry and a management advisor to more than 150 clients worldwide. His business spans home and building systems, energy management services (“smart grids”), and digital entertainment networks (including HDTV and IPTV).

Corporate managers depend on Dr. Wacks to identify business opportunities in emerging markets with clear and practical advice relevant for product development, market positioning, and strategic partnerships. Dr. Wacks serves companies of all sizes from startups to the Fortune 500. His worldview, insights, and expertise are valued by executives for enabling competent decisions on complex technology issues. He also provides due-diligence for investors and expert witness

services for litigants including patent cases.

Dr. Wacks is a founding member of the Smart Grid Interoperability Panel (SGIP) where he chairs the Home/Building/Industry-to-Grid committee. He has worked with the United States Department of Energy GridWise Architecture Council to develop smart grid strategies for reliable and efficient distribution of electricity while accommodating distributed energy resources such as wind, solar, and storage. For electric and gas utilities, he designed and demonstrated new customer services by linking utility communications with home automation to deliver demand response and value-added services.

The member nations of ISO/IEC have elected Dr. Wacks chair of the committee responsible home and building systems standards. He has also written American National Standards in home automation and networked appliances for the Consumer Technology Association. Dr. Wacks is a frequent speaker and panel session organizer at industry conferences. He has written and delivered more than 250 papers and presentations, and has been granted patents in home systems.

Dr. Wacks chairs the Editorial Advisory Board of the CABA magazine iHomes and Buildings and is a featured contributor under the byline “Ken Wacks’ Perspectives.” Dr. Wacks authored the book Home Automation and Utility Customer Services, distributed by Aspen Publishers. As an entrepreneur at a venture-backed startup, he developed UNIX workstations for the semiconductor industry. Dr. Wacks received his Ph.D. from MIT as a Hertz Fellow and studied at the MIT Sloan School of Management.



**Nick Wagner – Treasurer, SGIP
Commissioner, Iowa Utilities Board**

Nick Wagner officially began serving as a member of the Iowa Utilities Board on May 24, 2013. Governor Terry Branstad appointed Wagner to fill a term ending on April 30, 2019.

Board member Wagner is a member of the National Association of Regulatory Utility Commissioners (NARUC) and serves on multiple committees. He is a member of the Committee on Gas and serves as Co- Vice Chair for the Committee on Critical Infrastructure and the Washington Action Program. Wagner is the treasurer for Smart Grid Interoperability Panel 2.0 (SGIP) and serves as board member for the state and local regulators category. He also serves on SGIP’s market/membership committee. Wagner

is a member of Mid-America Regulatory Conference (MARC) and was recently appointed as treasurer for the organization.

Prior to joining the Board, Wagner was the Director of Quality Management for the ESCO Group in Marion, Iowa. His professional and management duties at ESCO Group included project execution in the utility industry primarily focused on standby and emergency diesel generator control, facility energy and efficiency audits, and building control.

Wagner also served in the Iowa House of Representatives from 2008 to 2012. Wagner received his Bachelor of Science degree in biomedical engineering in 1996 and a Master’s of Science degree in electrical engineering in 1998, both from the University of Iowa.



**Steve Widergren – Vice Chairman, SGIP
Principal Engineer, Pacific Northwest National Laboratory (PNNL)**

Steve Widergren contributes to new solutions for reliable operation of electric power systems. Common throughout his career is the application of information technology to power engineering problems including, simulation, control, and system integration. He is a principal engineer at Pacific Northwest National Laboratory where he directs electric power projects and supports the U.S. Department of Energy. He is a member of the Board of Directors and past Plenary Chair for the Smart Grid Interoperability Panel and was also the founding administrator for the GridWise® Architecture Council – both groups formed with the mission to enable interoperability of automated systems related to the electric system. Prior to joining the Laboratory, Mr. Widergren worked in industry for an electricity control center supplier, and electric utility service providers. In these

positions, he engineered and managed energy management systems products for electric power operations and supported power system computer applications, including information modeling, SCADA systems, and power system reliability assessment tools. He is an active member of IEEE.