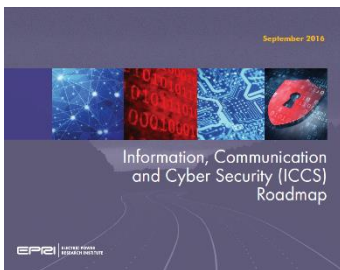


INFORMATION, COMMUNICATION & CYBER SECURITY NEWSLETTER

Dear EPRI ICCS Members and Stakeholders,

EPRI Advisory and Sector Council meetings are next week and we look forward to seeing many of you in Hollywood, Florida! We're all working hard to create a useful, informative, and motivating experience to share results and insights, and to develop ongoing research plans.



I'm happy to report one of our milestone deliverables, the update to our R&D roadmap, is available as of this morning – Here's the link:

[Information, Communication and Cyber Security \(ICCS\) Roadmap](#). We

will be discussing the roadmap during many of the ICT and Cyber Security Sessions next week and look forward to your input, so I encourage you to download the roadmap and have a digital version available to view during those discussions.



From a broader industry perspective, the [EPRI Journal](#) provides in-depth reporting on electricity sector R&D, industry and technology news, EPRI thought leadership, and guest perspectives from industry leaders. The July/August edition includes articles on making the distribution grid stronger and more resilient. It's always a good resource to stay abreast of industry issues.

Lastly, as you are planning the remainder of the year and setting your own business and professional goals for next year, I want to raise awareness about the number of opportunities EPRI provides within our research programs. Please review our [Upcoming Events](#) section below for details and links that may help you achieve your goals.

Thank you for your continued membership and collaboration. Hope to see you next week!

Sincerely,

Matt Wakefield
Director, Information, Communication and Cyber Security Research

August/September 2016

In this Newsletter

[ICT Program \(161\)](#)

[Cyber Security Program \(183\)](#)

[Data Analytics \(DMD & TMD\)](#)

[Smart Grid Demo](#)

[Upcoming Events](#)



ICT Team Industry Contributions and Collaborations

- Tim Godfrey contributed to the August 26, 2016, **Greentech Media** article, by Jeff St. John, [Utilities in Search of Smart Grid Spectrum Look to Narrowband as Next Frontier](#)
- John Simmins was quoted in an **E&E News** article about how [EPRI is leading the industry to adopt elements of the Pokemon GO game to improve the operational performance of utilities](#). EPRI has said that the game's technology platform resembles what is being tested with multiple utilities to achieve double-digit efficiency improvements in the electricity system.
- Christine Herzog contributed a commentary to **Electric Energy Online** about [EPRI's Information and Communications Technology leadership role in standards development organizations \(SDOs\) and industry associations](#).
- [EPRI Augmented Reality Newsletter, Issue #1](#)
- An article by Matt Wakefield, [Utility Telecommunications – Is Your Strategy Preparing You for an Integrated Grid](#), is published in the **CIO Review** Magazine
- *In every electric utility, you will find a group of engineers working to deploy some new technology or application solution to enhance the reliability and performance for the electric grid. Invariably, that technology is either dependent on or enhanced by telecommunications to transport status and control data. These solutions often include a telecommunication technology that exactly meets the needs of that solution. [Read full article](#) (found on page 43)*
- **Check out these new You Tube Videos:**
 - [The Integrated Grid: Enabling High Reliability for Consumers](#)
 - [Creating an Open Application Platform](#)

ICT / IntelliGrid (161) & Related Demonstration Deliverables

[Electric Utility Guidebook for Geographic Information Systems Data Quality: Metadata](#)

Understanding the people, processes, and technology which go into a GIS metadata solution is beneficial for distribution utilities and GIS end-users within the industry. Historically, distribution utilities have struggled with two key aspects of advanced technology implementation and integration. Specifically, the business processes and data quality needed to properly leverage advanced technology implementations. Currently, GIS metadata provides other industries with opportunities to increase both the efficiency and quality of their spatial data. How can distribution utilities take advantage of opportunities associated with GIS metadata in order to efficiently provide aspirational technologies such as advanced distribution management systems (ADMS) with the data quality required for a successful implementation?

[OpenADR 2.0b Virtual End Node C++ Library \(DADRLIB\)](#)

This library was designed to support the creation of software that serves the role of a virtual end node (VEN) as defined in the OpenADR Alliance's OpenADR 2.0 Profile B Specification, updated July 1, 2013. OpenADR is a machine-to-machine interface that defines the information model, transport and

security mechanisms, and the manner in which data is exchanged between two end points. OpenADR 2.0 is an open specification that defines how information is communicated between an electricity service provider and customers, but it does not purport to define how either end point uses the information. This VEN library is one example of how the specification can be applied. This open source library, written in C++, was developed as a library designed to provide users with a toolkit for the OpenADR 2.0b interface, its information model, XML payloads, interactions with a VTN, and many other uses.

[Integrated Grid Pilot Projects Quarterly Update: Q2 2016](#)

This newsletter is the second edition of the Integrated Grid Pilot Projects Quarterly Update. In this issue, you will find the latest information about project milestones, key learnings, and gaps identified in the pilot projects. Included are the schedule of projects underway, outtakes from two recently completed projects for the U.S. Department of Energy, plans for expanded technology transfer, available resources, and upcoming events.

[Automated Transmission Line Impedance Calculation: Feasibility Study](#)

Because line impedance is a function of many factors, utilities tend to use simplifying assumptions to calculate line impedances. In the past these assumptions were acceptable since the operating margins of transmission lines tended to be large. Today these margins are reduced and the number of models being maintained for various needs such as power flow, dynamic stability, transient stability, state estimation, fault and other studies along with exchanges of models with external groups has increased substantially. This objective of this project was to determine the feasibility of automating the line impedance calculation by importing computer-aided design (CAD) data derived from Lidar and other sources into software programs such as the Electrocon Line Constants, PSS/E Line Properties or PowerWorld Transmission Line Parameter Calculator. The process would significantly reduce the labor required to calculate the line impedances and also reduce the likelihood of errors.

[Using Customer Internet Access to Manage Smart Meters and Other Demand Responsive Devices Connected to the Low-Voltage Grid: Connecting Demand Responsive Loads and Distributed Energy Resources on a Common Network](#)

Since demand responsive (DR) equipment is connected to the AC power mains, G3-PLC appears to be a promising protocol to provide connectivity to these devices, thanks to its support of various application-layer protocols (such as OpenADR or DLMS/COSEM). This report investigates possible arrangements to allow the backhauling of data over local communication networks through customers' internet access, using neighborhood network gateways (NNGs).

Meeting Materials Available

- ◇ [AMI open protocol stack and Wi-Sun status/AMI online database – Availability and Vision](#)
- ◇ [GIS Interest Group – Merging Real-time Weather and Asset Data for Predictive Storm Damage Assessment](#)
- ◇ [Telecommunication Initiative Webcast – Planning \(Strategic Fiber Track\)](#)
- ◇ [Telecommunication Initiative Webcast –Protection over MPLS \(Serial to Packet Track\)](#)
- ◇ [Enterprise Architecture Collaboration Group](#)

Upcoming Meetings/Webcasts

[Cutting-Edge Tools and Requirements of the Next Gen GIS – Working Group Meeting](#) – 161C and GIS Interest Group Members



Cyber Security Team Industry Contributions and Collaborations

Check out this new You Tube Video:

[EPRI's Smart Grid Substation and Cyber Security Research Laboratory Video](#)

Cyber Security (183) Program Demonstration Deliverables

[Integrated Grid Pilot Projects Quarterly Update: Q2 2016](#)

This newsletter is the second edition of the Integrated Grid Pilot Projects Quarterly Update. In this issue, you will find the latest information about project milestones, key learnings, and gaps identified in the pilot projects. Included are the schedule of projects underway, outtakes from two recently completed projects for the U.S. Department of Energy, plans for expanded technology transfer, available resources, and upcoming events.

Meeting Materials Available

- ◇ [P183B ISOC Member Update Webinar, August 2016](#)
- ◇ [Threat Management and Incident Response - Birds of a Feather Workshop](#)

Upcoming Meetings/Webcast

[Cyber Security Technology \(183B\) & Information Assurance \(183D\) Technology Transfer Workshop](#) – November 1-2, 2016



DMD/TMD Program Demonstration Deliverables

[Expected Benefits of Applying the “Similar-Day” Methodology](#)

By making comparisons, people are able to better understand how items relate to each other. However, within the power grid, there are many interdependencies that complicate the ability to make comparisons. The fundamental concept behind the similar-day methodology is to identify the relevant fundamental data that can characterize significant drivers of the grid at any given point in time. The expectation is that through various analytical methods such as multi-dimensional analysis, one can determine the major drivers of the grid and thereby categorize the grid state into a series of “buckets” that can be used for analysis or data-reduction methods.

Upcoming Meetings/Webcasts

[DMD/TMD 2016 Fall Advisory Meeting](#), October 19-20, 2016
Columbus, OH



Smart Grid Demonstration Deliverables

[Permanent Peak Load Shifting Benefits Using Ice Storage at FirstEnergy: EPRI Smart Grid Demonstration](#)

Peak load reduction can yield value at different levels of the electric system, but the main question addressed in this document is, "Can the economic benefits of a distribution upgrade deferral by permanent peak load shifting outweigh the cost of the demand-shifting equipment?" This case study is an assessment of the technical performance and potential economic benefit of permanent peak load shifting using ice storage at commercial facilities to defer infrastructure upgrades by FirstEnergy's New Jersey operating company, Jersey Central Power & Light (JCP&L).

[Smart Grid Demonstration Initiative Deliverables by Topic and Type](#)

This deliverables list includes case studies, reports, training session videos, proceedings and other materials produced by utility collaborators and EPRI technical staff. Materials are sorted by topic area and type. Direct links are provided for each deliverable.

2016 Upcoming Events	Dates
Cutting-Edge Tools and Requirements of the Next Gen GIS – Working Group Meeting , Birmingham, AL	Oct. 4-5, 2016
Telecommunications Initiative Advisory Meeting St. Louis, MO	Oct. 5-6, 2016
Modular Communication Interface (CTA-2045 Standard) Meeting , Portland, OR Open to all utilities	Oct. 5-6, 2016
Advanced Metering Summit , EPRI Charlotte, NC Open to all utilities	Oct. 18, 2016
DMD/TMD 2016 Fall Advisory Meeting , Columbus, OH Members and invited guests only	Oct. 18-20, 2016
7th International Conference on Integration of Renewable and Distributed Energy Resources , Niagara Falls, Canada	Oct. 24-28, 2016
Cyber Security Technology (183B) & Information Assurance (183D) Technology Transfer Workshop , Irving, TX	Nov. 1-2, 2016
Korea Electric Power Co/EPRI Cyber Security Workshop, (BIXPO 2016) Gwangju, S. Korea	Nov. 2-3, 2016

2017 SAVE THE DATE

Dates

DistribuTECH 2017 – EPRI booth 1736, San Diego, CA	Jan. 31-Feb2
2017 Winter PDU Advisory / ICCS Sector Council Meeting Huntington Beach, CA	Feb. 13-16
2017 European EPRI PDU Advisory Meeting, London, England	May 17-18
EPRI Grid Analytics and Power Quality 2017 Conference and Exhibition, Sacramento, CA	June 20-22
2017 Fall PDU Advisory / ICCS Sector Council Meeting, Denver, CO	Sep. 11-14

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