IN THE SPOTLIGHT

Solar Eclipse 2017 – Were you in the Zone?

With EPRI’s Knoxville office being in the zone—and nearby areas in totality—EPRI took advantage of the eclipse to conduct research on how total darkness in mid-day can affect the solar power grid. Read the results in the white paper titled Solar Siesta – Photovoltaic Generation and the Great American Eclipse.

PDU Advisor and Sector Council Meetings – ICT & Cyber Security Demonstrations

If you’re attending the September Advisor and Sector Council meetings, be sure to attend the demonstrations session on Wednesday, 9/13, from 10:30 a.m. – 12:00 p.m. We will be showcasing 6 projects in 15 minute “speed dating” formats.

From the ICT Program:
- Software Defined Radio (SDR) Platform for Unlicensed Spectrum
- Augmented Reality/Virtual Reality
- Connected Water Heater Simulator

From the Cyber Security Program
- Phasor Measurement Unit (PMU) Exploit Detection
- BadGoose IEC 61850 Vulnerability
- Nozomi Networks Attack Identification

Three Reasons to Use the EPRI Use-Case Importer

To promote the standardization of use cases the EPRI created a use-case template. The EPRI template has become codified in an International Electrotechnical Commission (IEC) standard, IEC 62559. This template enables the user to capture information associated with a use case in a text-based format that is than imported into a Sparx Systems Enterprise Architect application. This modeling tool is used by the IEC and MultiSpeak communities to manage the data models and use cases associated with those standards. Importing the use case facilitates the creation of a use case repository. To read more about the three reasons to use EPRI’s Use-Case Importer click here.

The EPRI Use-Case Importer is available at: https://www.epri.com/#!/pages/product/00000003002007875/
EPRI’s Telecommunication Initiative: Fiber Optics for the Future

From Research to Action | EPRI’s Telecommunications Initiative: Fiber Optics for the Future EPRI recognizes that today’s power grids and advanced grid initiatives need reliable, resilient, flexible, and secure telecom networks. EPRI’s Telecommunications Initiative is examining questions utilities have about fiber-optic networks as part of its six-part research investigation. Read the entire one-page article and find out more about the six-part research investigation by clicking on this link.

EPRI’s Telecomm Initiative: Taxonomy Providing Wireless Opportunities

From Research to Action | EPRI’s Telecommunications Initiative: Taxonomy Providing Wireless Opportunities and Options by Tim Godfrey and Chris Kotting. The energy industry recognizes the need to improve the performance, reliability, and security of utility communication systems used for distribution automation, telemetry, and control. Currently there is no one architecture or technology solution that meets the needs of the industry, or even the entire operating area of a single utility. EPRI is developing a utility telecom wireless taxonomy that will guide utilities in framing telecommunication needs, help them understand the technology options, and inform the process of identifying architectures and systems that meet both current and future needs. Taxonomy is the practice and science of classifying things or concepts and helps people make sense of the things around them. Clicking here to read the entire article.

SPOTLIGHT ON DELIVERABLES

3002009784, Serial/Time Division Multiplexing (TDM) Replacement: Technology Options for Packet-Based Replacement of TDM Circuits

3002009802, Framework for Migrating Telecom Services to Software Defined Networking, and Network Function Virtualization

Check It Out

Program 161 – Information and Communication Technology 2018 Research Portfolio

Program 183 – Cyber Security 2018 Research Portfolio

Cyber Security Metrics Fact Sheet

CEO Cybersecurity Checklist: A Companion Document to the Electricity Subsector Coordinating Council CEO Cybersecurity Checklist

EPRI Podcast on Widespread Deployment of Augmented Reality

Augmented Reality - Major Themes in Enterprise Wearables Today: Easy IoT?

John Simmins of EPRI described wearable technology as one side of a six-sided coin, which is a great metaphor for IoT. We are not talking about isolated “things” but rather multiple devices that need to interact and work as a system to provide context to the end user. Read The BrainExchange blog update on this exciting technology.

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EPRI’s Annabelle Lee participated in the Utility Cyber Security Initiative (UCSI) Workshop in Kiev, Ukraine Read the summary here.

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This white paper describes a framework for how the digital utility can provide additional value for customers by
Public Networking and Shared Networks: Architecture and Operation

Integrated Grid Pilot Projects Quarterly Update: Q2 2017

Redesign of Common Information Model (CIM) Unified Modeling Language (UML) and Normative Message Profiles (XSDs) for the International Electrotechnical Commission (IEC) 61968 Part 3 Fault Location, Isolation, and Service Restoration (FLISR) Messages

Redesign of Common Information Model (CIM) Unified Modeling Language (UML) and Normative Message Profiles (XSDs) for IEC 61968 Part 3 Outage Management System (OMS) Messages

Demonstration of a Simulated Distribution Feeder with High-Penetration Renewable Resources and Demand Response


Program on Technology Innovation: Test Script for International Electrotechnical Commission 61968-5 Messages

Launching a Distribution Data Management Improvement Initiative: Utility Case Study

A Case Study of the Quality of Service Feature from Commercial Cellular Carriers: The Impact of Quality of Service on Bandwidth, Connectivity, and Reliability Improvements at Ameren

Smart Grid Communications Intelligencer: Issue 18, Spring-Summer 2017


Serial to Packet Protection Workshop: Test Results

Leased Circuit Requirements Summary for Protective Relaying

Program on Technology Innovation: Enterprise Augmented Reality Vision, Interoperability Requirements, and Standards Landscape

Utility Telecom Taxonomy and Architecture for Field Area Networks

EPRI Enterprise Architecture Workshop Summary: Review of Integration Costs and Architectures Project

Utility Business Architecture Service Repository

Can we clean energy data with Neural Nets?
Read more on how deep learning, neural networks and artificial intelligence can be used to improve accurate data for energy grids. Go to Micah’s blog here.

Using the Utility Common Information Model (CIM) is hard?
To read more about CIM and its usage go to Dr. Gerald Gray’s article at https://www.linkedin.com/pulse/using-utility-common-information-model-cim-hard-dont-tell-gray

Architecting Distributed Energy Resource Communications
For more information, download the full publication here

Supplemental Projects

Persistent Wi-Fi™ Platform for Connected Devices Demonstration

Automating Distributed Network Protocol Point Tag Creation

Black Sky Communications Solution Evaluation

Adaptive Substation Architecture for Supervisory Control and Data Acquisition, Tele-protection, and More

Distribution Geographic Information System and Grid Model Data Management

Increase Customer Satisfaction with Real-Time AMI Data

Information and Communications Technology and Security Architecture for Distributed Energy Resources Integration
Grid Integration with High PV Penetration: Approaches for the Japanese Situation

IEEE 802.16S Overview

Security, Cyber, Risk Assessment Methodology (SCRAM), version 3.0

Integrated Grid Pilot Projects Quarterly Update: Q2 2017

Opportunities for Improving Data Efficacy: Leading Practices

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