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/000000003002007875/

Upcoming Events

September 11 – 14
2017 Fall PDU Advisory & Sector Council Meetings
Hyatt Regency, Denver, CO
Event Summary

September 13
Enterprise Architecture Workshop
following Advisory meetings
Hyatt Regency, Denver, CO
Information and Registration

September 18-20
Augmented and Virtual Reality Design for Utilities
EPRI – Palo Alto, CA
Information and Registration

October 11-13
Smart Inverters and Distributed Energy Recourses Group Management Workshop
EPRI – Knoxville, TN
Information and Registration

Week of October 23
Enterprise Architecture Training Course
EPRI Charlotte
Information and Registration

SAVE THE DATE: November 29
Secure Policy Based Configuration (PBCONF) Industry Workshop
EPRI – Knoxville, TN

December 5-6
Cyber Security Technology (183B) and Information Assurance (183D) Technology Transfer Workshop
EPRI – Knoxville, TN
Information and Registration

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

P161 Meetings & Webcasts

P183 Meetings & Webcasts

Check It Out

Program 161 – Information and Communication Technology 2018 Research Portfolio

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Program 183 – Cyber Security 2018 Research Portfolio

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Cyber Security Metrics Fact Sheet

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

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EPRI Podcast on Widespread Deployment of Augmented Reality

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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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New Technology Innovations Report: The Role of Digital Utilities in Smart Cities (3002011385)
This white paper describes a framework for how the digital utility can provide additional value for customers by

3002009792, Public Networking and Shared Networks: Architecture and Operation

3002011036, Integrated Grid Pilot Projects Quarterly Update: Q2 2017

3002010512, 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

3002010513, 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

3002011015, Demonstration of a Simulated Distribution Feeder with High-Penetration Renewable Resources and Demand Response

3002011500, National Renewable Energy Laboratory (NREL) Topic 2 Final Report: End-to-End Communication and Control System to Support Clean Energy Technologies

3002009983, Program on Technology Innovation: Test Script for International Electrotechnical Commission 61968-5 Messages

3002009504, Launching a Distribution Data Management Improvement Initiative: Utility Case Study

3002009790, 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

3002010451, Smart Grid Communications Intelligencer: Issue 18, Spring-Summer 2017

3002009800, Telecommunication Network Management System Survey Report: First Edition

3002009783, Serial to Packet Protection Workshop: Test Results

3002009785, Leased Circuit Requirements Summary for Protective Relaying

3002010514, Program on Technology Innovation: Enterprise Augmented Reality Vision, Interoperability Requirements, and Standards Landscape

3002009786, Utility Telecom Taxonomy and Architecture for Field Area Networks

3002009986, EPRI Enterprise Architecture Workshop Summary: Review of Integration Costs and Architectures Project

3002011054, Utility Business Architecture Service Repository

leveraging existing ICT systems for greater public benefit. To download the full 7-page document click here.

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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.

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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

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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

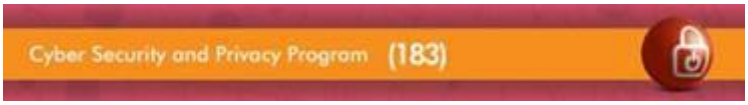
Distribution Geographic Information System and Grid Model Data Management

Increase Customer Satisfaction with Real-Time AMI Data

Information and Communications Technology and Security Architecture for Distributed Energy Resources Integration

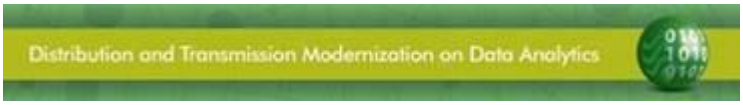
3002010000, Grid Integration with High PV Penetration: Approaches for the Japanese Situation

3002011195, IEEE 802.16S Overview



3002010421, Security, Cyber, Risk Assessment Methodology (SCRAM), version 3.0

3002011036, Integrated Grid Pilot Projects Quarterly Update: Q2 2017



DMD

3002011377 Opportunities for Improving Data Efficacy: Leading Practices

Together...Shaping the Future of Electricity

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Timing Security Assessment and Solutions

Integrated Threat Analysis Framework (ITAF)

DMD/TMD Upcoming Events

DMD Meetings & Webcasts

TMD Meetings & Webcasts